

N60200.AR.009044  
NAS CECIL FIELD  
5090.3a

INTERIM REMEDIATION WORK PLAN FOR NORTH TANK FUEL FARM WITH  
TRANSMITTAL NAS CECIL FIELD FL  
3/1/1995  
BECHTEL ENVIRONMENTAL INC

INTERIM REMEDIATION WORK PLAN  
FOR NORTH TANK FUEL FARM

FOR

NAVAL AIR STATION - CECIL FIELD

JACKSONVILLE, FLORIDA

Prepared for

DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND

Under Contract No. N62467-93-D-0936

Prepared by

BECHTEL ENVIRONMENTAL, INC.  
OAK RIDGE, TENNESSEE

MARCH 1995

Revision 1  
Bechtel Job No. 22567

Prepared:

J. R. Mann  
Senior Scientist

3-17-95  
Date

Approved:

L. Amis for H. Bauer  
Project Manager

3-22-95  
Date

Approved:

\_\_\_\_\_  
Navy Contracting Officer

\_\_\_\_\_  
Date

# Bechtel

Oak Ridge Corporate Center  
151 Lafayette Drive  
P.O. Box 350  
Oak Ridge, Tennessee 37831-0350

Facsimile: (615) 220-2100

MAR 22 1995

Commanding Officer  
Department of the Navy, Southern Division  
Naval Facilities Engineering Command  
Attention: Mr. Gerald Pearson  
2155 Eagle Drive, P.O. Box 190010  
North Charleston, SC 29419-9010

SUBJECT: Bechtel Job No. 22567  
Department of the Navy Contract No. N62467-93-D-0936  
DO 0022, REMEDIATION WORK PLAN FOR NORTH TANK FUEL FARM,  
JACKSONVILLE, FL  
Subject Code: 5320

Dear Mr. Pearson:

Enclosed is Revision 1 of the Remediation Work Plan for the North Tank Fuel Farm Site included under DO 0022, for Naval Air Station, Cecil Field. Following the signature of the Navy Contracting Officer on the cover sheet and receipt of the signed cover sheet to Bechtel, the final controlled distribution of the document will be made. Distribution, per an earlier conversation with Lynn Sims, will include a copy to Wayne Oehlman, Ursula Klimas, and two copies to you.

Please contact me at (904) 779-8900, or Lynn Sims at (615) 220-2450, if you have any questions.

Sincerely,

*V. Hermann Bauer*  
V. Hermann Bauer  
Project Manager

RTJ:sc:LR0021

Enclosure: As stated



**Bechtel Environmental, Inc.**

ACTION REQ'D	[ ] YES	[ ] NO	DUE DATE _____
RESPONSE TO CHRON NO. _____			

## **DISCLAIMER**

This Remediation Work Plan was prepared using background information, design basis, and other data furnished to BEI by the Naval Facilities Engineering Command, the Navy's CLEAN Contractors, and/or third parties. BEI has relied on this information as furnished and is not responsible for and has not confirmed the accuracy of this information. Certain key assumptions made by BEI may substantially affect the conclusions and/or recommendations which are conditioned upon these assumptions. These assumptions, although thought to be reasonable and appropriate, may not prove true in the future.

## CONTENTS

	Page
DISCLAIMER .....	ii
FOREWORD .....	v
1.0 INTRODUCTION .....	1
1.1 GENERAL SITE INFORMATION .....	2
2.0 ORGANIZATION AND RESPONSIBILITIES .....	2
2.1 PROJECT ORGANIZATION .....	2
2.2 COORDINATION AND RESPONSIBILITIES FOR FIELD WORK .....	2
2.2.1 Project Manager .....	4
2.2.2 Staff Engineer (Engineering) .....	4
2.2.3 Project Superintendent (Construction) .....	4
2.2.4 Safety and Health .....	5
2.2.5 Quality Control .....	5
2.2.6 Project Controls .....	5
2.2.7 Contract and Project Administration .....	5
3.0 SITE BACKGROUND AND SETTING .....	6
3.1 SITE LOCATION .....	6
3.2 SITE HISTORY AND DESCRIPTION .....	6
4.0 SCOPE OF WORK .....	6
4.1 MOBILIZATION .....	8
4.2 CLEARING .....	9
4.3 FUEL LINE AND ELECTRICAL BANK REROUTE .....	9
4.4 SPILL PREVENTION .....	9
4.5 METHOD OF EXCAVATION .....	9
4.6 SITE RESTORATION .....	10
5.0 WASTE MANAGEMENT .....	22
6.0 SAFETY AND HEALTH .....	23
7.0 QUALITY CONTROL PLAN .....	23
APPENDIXES	
A PIPELINE RELOCATION AND COORDINATION AND LAYOUT PLAN (ENTERPRISE, 1994) .....	A-1
B PIPELINE RELOCATION REPORT FOR NORTH FUEL FARM NAS CECIL FIELDENTERPRISE ENGINEERING, INC., NOVEMBER 1994 .....	B-1
C TECHNICAL SPECIFICATION FOR CLEARING AND GRUBBING .....	C-1
D TECHNICAL SPECIFICATION FOR UNCONTAMINATED EARTHWORK .....	D-1

## FIGURE

Figure	Title	Page
2-1	Project Organization . . . . .	3

## TABLES

<del>4-1</del>	<del>Composite Samples Quantities Prior to Thermal Treatment<sup>a</sup></del> . . . . .	<del>13</del>
<del>4-2</del>	<del>Criteria for Thermally Treated Clean Soil<sup>a</sup></del> . . . . .	<del>15</del>

## FOREWORD

This Interim Remediation Work Plan (IRWP) has been prepared to document the scoping and planning process performed by the U.S. Navy to support interim remedial action activities at the North Tank Fuel Farm (NTFF) located at the Naval Air Station (NAS) Cecil Field site in Jacksonville, Florida.

This Work Plan describes the activities necessary ~~interim remedial action is necessary due to the implementation schedule~~ for the construction of the new pig receiver station and the pipeline relocation new truck unloading facility at the NTFF. ~~The truck unloading facility construction area is proposed in the vicinity of excessively contaminated soil. This interim remedial action is not to be provided as a replacement to a final solution, but is intended to complement the final remedy. This IRWP describes the approach that will be used to conduct the interim remedial action and describes the organization that will be employed.~~

Revisions are made as follows: Items added are shaded; items deleted are indicated by strike-out.

## 1.0 INTRODUCTION

The U.S. Department of Navy, Southern Division, Naval Facilities Engineering Command intends to conduct an interim remedial action at the Naval Air Station (NAS) Cecil Field site in Jacksonville, Florida. This Interim Remediation Work Plan (IRWP) addresses the interim remedial action activities involved with the construction of the new pig receiving station and the pipeline relocation truck unloading facility located at the North Tank Fuel Farm (NTFF). Bechtel Environmental, Inc. (Bechtel), the Environmental Response Action Contractor, will perform the interim remedial action.

This IRWP is intended to document the scope of the remediation effort and the procedures to be used.

The activities described in this Plan are based on the following:

- Technical Memorandum for North Fuel Farm, NAS Cecil Field, Florida, prepared by ABB Environmental Services, Inc. (December 1994).
- Pipeline Relocation Report for North Fuel Farm, NAS Cecil Field, Florida, prepared by Enterprise Engineering, Inc. (November 1994).
- Discussions and conclusions from a meeting held between Bechtel, ABB, and Navy personnel on January 24, 1995 ~~December 8, 1994~~.
- "Contamination Assessment Report," North Fuel Farm Area, NAS Cecil Field, Jacksonville, Florida, prepared by ABB Environmental Services, Inc. (ABB-ES), July 1994.

In implementing this plan, Bechtel will supply qualified personnel and equipment to the project; coordinate, manage, and supervise construction activities onsite; and ensure compliance with contract and regulatory requirements. Bechtel's approach to complete these tasks for the NTFF is presented in the following sections of this Plan.

The remainder of Section 1.0 provides general site information and the justification and objectives for the proposed interim remedial action.

Section 2.0 presents the Bechtel's organization and responsibilities for completing the work.

Section 3.0 provides a site history and a brief description of the NTFF construction site for the new truck unloading facility that has been identified by the Navy as requiring remediation.

Section 4.0 provides the scope of work, the approach Bechtel will take to achieve the remedial objectives, and a description of the interim remedial action components and field activities.

~~Section 5.0 presents Bechtel's sampling and analysis plan.~~

Sections ~~6.0, 7.0, and 8.0~~ 5.0, 6.0, and 7.0 address the Waste Management Plan, Safety and Health Plan, and Quality Control Plan, respectively.



## **1.1 GENERAL SITE INFORMATION**

NAS Cecil Field is located 14 miles southwest of Jacksonville in the northeastern part of Florida. Most of NAS Cecil Field is located within Duval County; however, part is located in the northern part of Clay County.

NAS Cecil Field was established in 1941 and provides facilities, services, and material support for the operation and maintenance of naval weapons, aircraft, and other units of the operating forces as designated by the Chief of Naval Operations. Some of the tasks required to accomplish this mission include operation of fuel storage facilities, performance of aircraft maintenance, maintenance and operation of engine repair facilities and test cells for turbo-jet engines, and support of special weapons systems.

## **1.2 JUSTIFICATION AND OBJECTIVES FOR THE PROPOSED ACTION**

The pipeline reroute and the installation of the new pig receiver station are being completed as directed by the Navy.

~~In accordance with Florida Administrative Code (FAC) 62-770, an interim remedial action is proposed for the construction activities associated with the new truck unloading facility at the NTFF. The interim remedial action activities will provide protection of construction workers during normal construction activities and prevention of further free product migration. This interim remedial action is not to be provided as a replacement to a final solution, but is intended to complement the final remedy.~~

~~The proposed objective of this IRWP is to describe the technologies, procedures, and methodology to implement the interim remedial action objectives. The objectives of this interim remedial action is to remove excessively contaminated soils in the area of the new construction and remove, to the extent practicable, the free product in the area of excavation. A continuous barrier wall will be installed upgradient of the construction site and downgradient of the tank farm to prevent migration of free product.~~

## **2.0 ORGANIZATION AND RESPONSIBILITIES**

### **2.1 PROJECT ORGANIZATION**

Bechtel is the Environmental Response Action Contractor for the Navy, Southern Division Naval Facilities Engineering Command. A project organization chart is provided in Figure 2-1.

### **2.2 COORDINATION AND RESPONSIBILITIES FOR FIELD WORK**

As the Environmental Response Action Contractor for the Navy, Bechtel provides NAS Cecil Field management of remedial action field activities, which includes all activities necessary to implement field work delineated in work plans. Typically, these activities include development and procurement of subcontract services; development, implementation, and overview of plans; collection and review of data, including sampling results, quality assurance/quality control submittals, and sample tracking and custody; technical guidance to onsite personnel; report preparation; cost management; and schedule control.

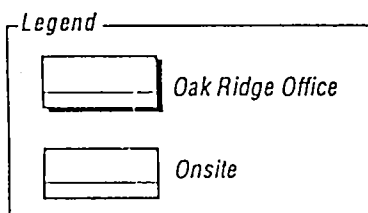
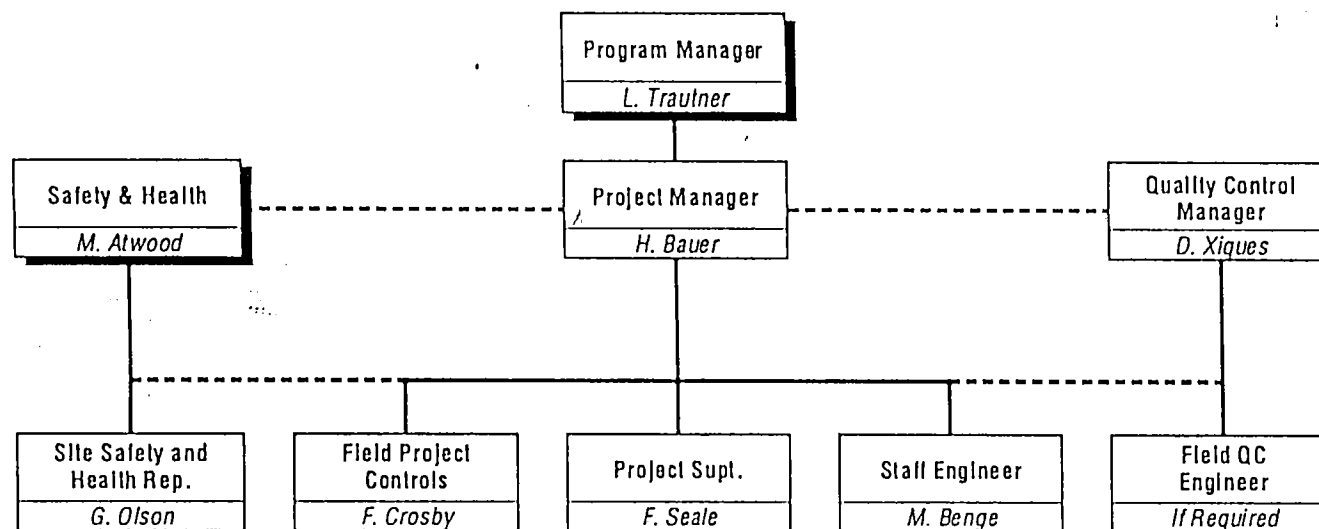


Figure 2-1  
Project Organization

The Bechtel Program Manager is responsible to the Navy for the completion of all aspects of the work. The Program Manager is supported by the Project Manager and representatives from engineering, construction, environmental safety and health, contract administration, quality control, project administration, and project controls. A brief description of the responsibilities of the Project Manager and each group are described below.

#### **2.2.1 Project Manager**

- Implements overall guidance provided by the Bechtel Program Manager on a site specific basis
- Manages a team of professionals from each of the disciplines described below to accomplish the goals of the Naval Facilities Engineering Command project managers and the Bechtel Program Manager
- Interfaces directly with Navy project managers to implement directions on a site-specific basis

#### **2.2.2 Staff Engineer (Engineering)**

- Develops bid packages and technical specifications needed to subcontract any remedial action work
- Provides site interface/coordination with regulatory agencies
- Modifies technical specifications and drawings, as required
- Provides geotechnical field support to remedial action efforts
- Provides onsite waste management and identification
- Participates in technology selection
- Develops work plans for remedial action
- Manages and evaluates chemical data obtained during remedial action activities

#### **2.2.3 Project Superintendent (Construction)**

- Reviews all site plans for constructibility
- Provides field engineering services to monitor onsite work
- Administers subcontracts to complete work plans (i.e., cost, completion)
- Obtains manual craft
- Directs craft to implement work plans

The project superintendent is responsible to the Bechtel project manager for day-to-day operations at the site.

#### **2.2.4 Safety and Health**

The Safety and Health home office provides support to the Site Safety & Health Representative. The Site Safety and Health Representative:

- Develops plans, objectives, evaluations, and documentation for all environmental compliance, safety, and health matters
- Ensures all applicable federal, state, and local regulatory requirements are met
- Supports onsite waste management
- Provides site-specific safety and health training
- Provides a site safety and health representative (SSHR)
- Performs audits of site activities to ensure implementation of the Safety and Health Plan and to assess the effectiveness of the program.

#### **2.2.5 Quality Control**

The Quality Control Manager provides home office support to the Field QC Engineer. The Field QC Engineer:

- Prepares site-specific quality control (QC) plan
- Implements the QC plan
- Audits quality assurance system and performance
- Conducts periodic reviews of program plans

#### **2.2.6 Project Controls**

- Provides cost and schedule support, including budgeting and monitoring
- Provides site automation services

#### **2.2.7 Contract and Project Administration**

Support from home office staff for Project Contract and Administration services is provided directly to the Project Manager. While these functions are not indicated on the organization chart, their duties are discussed below:

#### Project Contract Administration:

- Identifies bidders for subcontract work
- Coordinates bid and subcontract bid and award process
- Manages revisions to subcontracts
- Ensures compliance with Prime Contract

#### Project Administration:

- Provides administrative services such as document control, reproduction, archival, and mail distribution
- Provides document editing services

### **3.0 SITE BACKGROUND AND SETTING**

#### **3.1 SITE LOCATION**

This IRWP focuses on the interim remedial action activities associated with the construction of the new PIG receiving station and pipeline relocation Tank Truck Unloading Facility at the NTFF. The proposed work facility site is located at the north end of the NTFF off between Avenue "A" and along the top of the existing fuel tanks at NAS Cecil Field. (Figure 1, Appendix A).

#### **3.2 SITE HISTORY AND DESCRIPTION**

The NTFF is located at the northeast corner of "A" Avenue and Loop Road. The NTFF site is approximately 53,000 ft<sup>2</sup> in area, having a flat terrain that is vegetated with grasses. The fuel farm consists of six 595,000-gal earth-mounded tanks that contain JP-5 jet fuel. In June 1992 a Contamination Assessment Report (CAR) was submitted to the FDEP for the NTFF. The report characterized and assessed the vertical and horizontal extent of contamination as it then existed. Petroleum contamination at the site is due to releases of JP-5 jet fuel. The facility construction area is proposed in the vicinity of the excessively contaminated soil. Excessively contaminated soil was detected at depths ranging from 0 to 4.5 ft below land surface (bls). The groundwater at the site is also contaminated with petroleum hydrocarbon product. A Contamination Assessment Report (CAR) has been prepared and submitted to the Florida Department of Environmental Protection (FDEP) by the Navy's CLEAN contractor. While the actions described in this IRWP do not address groundwater contamination, the final Remedial Action Plan that is currently under development by the Navy will address the final remedial action for the groundwater associated with the North Tank Fuel Farm.

### **4.0 SCOPE OF WORK**

The interim remedial action objective at NAS Cecil Field for the North Tank Fuel Farm (NTFF) is to dewater, excavate, stockpile, and thermally treat petroleum contaminated soils. The limits

of excavation have been defined to include all areas within the construction area and any contaminated soils west of the fence line to the practicable limit of excavation defined by site interferences (e.g., Avenue "A"). Approximate extent of excavation is shown on Figure 1 in Appendix A. The purpose of excavation is to allow for the construction of a new Fuel Tank Truck Unloading Facility. The limits of excavation will be dewatered and the groundwater/free product processed through an oil/water separator (OWS) and the water effluent pumped to an existing sanitary sewer. A vertical isolation barrier will be placed between the existing fuel tanks and the excavation area to intercept free product migration during dewatering. Prior to excavation, all existing utilities will be located, removed, protected in place, and/or rerouted as required. Thermal treatment of the contaminated soils will reduce contamination levels consistent with FAC 62-775 (Soil Thermal Treatment Facilities). The treated soils that have been verified to be clean through the thermal treatment will be stockpiled for future use. Excavation will be to a maximum depth of 5 ft and backfilled with clean soil. Additionally, existing monitoring wells located within the limits of excavation will be abandoned and formally closed.

To accomplish these objectives, the following services will be performed:

- mobilization
- existing fuel line and electrical bank reroute
- vertical isolation barrier installation
- existing utilities removal/reroute
- excavation area dewatering
- oil/water separation
- existing monitoring well closure
- contaminated soil excavation
- transport vehicle and equipment decontamination facility construction
- contaminated soil stockpile construction
- excavation backfill and compaction
- existing facility demolition
- low temperature thermal treatment of contaminated soil
- site restoration/grading
- installation of large diameter recovery sumps

The scope of work includes the supply and installation of a STOPPLE fitting and a THREAD-O-RING fitting on the 8-in. diameter fuel line carrying jet fuel (JP-5) from the Jacksonville Naval Air Station to the Cecil Field Naval Air Station. The fittings are required to allow the re-route of the fuel line from a point at the northwest corner of the North Tank Fuel Farm to the fuel storage tanks. Pipeline installation and associated work will be completed as specified in the Pipeline Relocation Report for North Fuel Farm (Appendix B).

Specific objectives to be completed include the following activities:

- Clear and grub area for underground pipeline and pig trap.
- Excavate the pipeline at the tie point. Weld on stopple and equilization fittings during pipeline operation.

- Excavate the underground pipeline tie-in point. Install and test underground pipeline from pig trap to final tie-in point.
- Install pig trap and aboveground pipeline to tie-in point at the Tank 76 manifold. Provide blind flanges at future connections.
- With all available tankage full, take the existing pipeline out of service. Install a stopple fitting. Defuel the pipeline by vacuum truck at the existing pig trap and equilization fitting. Total expected fuel stripped is 2,100 gallons.
- Cold cut the pipeline at the tie-in points. Inert the existing pipe. Weld in the tie-in spools.
- Radiograph the tie-in welds. Cap the abandoned pipe at each end.
- Hydrostatically test the piping from the stopple to the Tank 76 manifold.
- Remove the stopple. Pressurize the pipeline and vent all air. Receive sufficient fuel to flush out the line. Close the receipt valves at the Tank 76 manifold and at the pig trap. Pressure test, with fuel, from the pig trap to the Tank 76 manifold.
- Close off stopple and equilization fitting. Backfill, loam, and seed disturbed areas. Provide concrete marker at the stopple location.
- Provide documentation required to meet 49 CFR 195 pipeline repair requirements.
- Touch-up paint on aboveground piping.
- Install a sanitary sewer line.

Figures showing the existing site conditions, ~~approximate limits of excavation, temporary project site layout, and data from recent site investigations~~ and pipeline relocation plan are included in Appendix A.

#### 4.1 MOBILIZATION

Mobilization will include delivering to the jobsite and work areas all construction equipment, tools, materials, supplies, and miscellaneous articles and establishing a work force sufficient to commence and sustain construction activities as required.

A construction trailer(s) will be set up at the site for a field office and for storage of personnel protective equipment and monitoring equipment. ~~To control access, a temporary construction fence will be installed around the construction site at the NTFF.~~

~~A temporary vehicle and equipment decontamination facility will be constructed, including provisions to contain waters generated during decontamination activities. Water generated during decontamination will be controlled in accordance with Section 6.0, Waste Management.~~

~~A specialty subcontractor will be mobilized to the site to perform the installation of the dewatering system and the horizontal isolation barrier.~~

~~A State of Florida permitted low temperature thermal desorption unit for treatment of petroleum hydrocarbon contaminated soils will be mobilized. Treatment of the soils will be onsite by a specialty subcontractor. In addition to the area required for thermal desorption treatment equipment, sufficient area for contaminated and treated soil stockpiles will be required.~~

~~The necessary temporary utilities for the OWS, dewatering pumps, transfer pump, equipment decontamination facility, etc. will be provided at the site (e.g., power, water, etc.).~~

## **4.2 CLEARING**

Clearing shall consist of removing all designated vegetation and debris in the established limits of excavation, equipment laydown areas, facility areas, utility construction/reroutes, and selected areas for thermal treatment unit, contaminated material stockpile laydown area, and treated material stockpile laydown area. Clearing will be performed in accordance with the Technical Specification for Clearing and Grubbing, Appendix C.

## **4.3 FUEL LINE AND ELECTRICAL BANK REROUTE**

The existing 8-in. NTFF main fuel supply pipeline will be rerouted and constructed as indicated in Appendix A, Pipeline Relocation NAS Cecil Field, prepared by Enterprise Engineering. Approximately 100 linear ft of new below-grade 8-in. pipe and 900 linear ft of new above-grade 8-in. pipe will be installed during rerouting of the NTFF fuel supply line.

~~The underground electrical bank supplies the existing pumphouse and is to be rerouted if necessary. Approximately 300 linear ft of new electrical conduit will be rerouted below grade.~~

## **4.4 SPILL PREVENTION**

Activities conducted in support of the pipeline relocation will be conducted in a manner to ensure that fuel is not released into the environment. When conducting operations which may result in a possible fuel release, Bechtel work will be in compliance with the Program Spill Prevention and Control Plan.

## **4.5 METHOD OF EXCAVATION**

Excavation will be performed in accordance with the Technical Specification for ~~Uncontaminated Earthwork and Miscellaneous Demolition~~, Appendix D.

All excavation will be by backhoe and or excavator where practical. In areas where interferences are present and preclude use of mechanized equipment, excavation will be by hand. All interferences which are not otherwise rerouted or abandoned, such as existing utilities, will be properly maintained as required while the excavation is in progress and remain protected until the excavation is backfilled.



Once all material has been excavated and backfilled, a registered land surveyor shall provide the necessary survey information (coordinates, cross-sections, elevations, etc.) to prepare as-built drawings for the excavation.

#### **4.6 SITE RESTORATION**

After all disturbed areas of excavation have been successfully backfilled, the sites will be graded to drain as required. ~~The NTFF excavation grade will be raised above surrounding elevations and sloped from the center outward to a minimum slope of 50 horizontal to 1 vertical so that runoff will flow away from the backfill area.~~

#### **~~4.4 EXISTING UTILITIES~~**

~~In addition to the existing fuel and electrical lines, the construction site at the NTFF contains sanitary sewer and potable water lines. Both of these utility services will be rerouted prior to contaminated soil excavation. Relocation of these utilities will be coordinated with the ROICC. The abandoned sanitary sewer line will be removed during contaminated soil excavation. The existing water line will be terminated at the southern end of the NTFF, west of Avenue A and south of Loop road. The abandoned water line will be removed during contaminated soil excavation. If the abandoned lines discussed above are identified as interferences during installation of the dewatering system, those locations will be excavated and the lines partially removed to allow installation of the dewatering system with the remaining abandoned lines removed during contaminated soil excavation.~~

~~Any utilities not previously identified to Bechtel will be addressed as appropriate with the Navy.~~

#### **~~4.5 VERTICAL ISOLATION BARRIER~~**

~~A vertical barrier will be installed within an area 4 ft from the western toe of the slope of the NTFF separating the NTFF from the excavation areas. The membrane will be installed to a depth of approximately 15 ft. The horizontal extent of the isolation barrier will be from the northern and southern toe of slopes for the tank farm, approximately 600 linear ft. The purpose of the vertical isolation barrier is to minimize potential for the migration of existing free product into the excavation area during dewatering.~~

~~A specialty subcontractor will utilize an innovative technology allowing a 40 mil High Density Polyethylene (HDPE) membrane to be installed simultaneous to trenching excavation. This technology eliminates traditional open trench technology (i.e., shoring, trench boxes, etc.) and is not dependent on trench sidewall/soil stability. Instead, the liner is installed simultaneously as trenching occurs; sheets of the liner are seamed as installation progresses and backfill material is placed as the liner is installed.~~

#### **~~4.6 EXCAVATION AREA DEWATERING~~**

##### **~~4.6.1 Interceptor Lines~~**

~~Interceptor drain lines will be installed running north to south and parallel to the western toe of slope for the NTFF. The drain lines will consist of perforated piping complete with a synthetic~~

~~protective sleeve to minimize clogging of the drain pipes with silt. The drain lines will be installed at a depth ranging from 8–13 ft bls using traditional trenching equipment modified to place the pipe in the trench simultaneous to trenching. This will allow the excavation area to be dewatered to a depth of 6 ft bls.~~

~~The drain lines will be equipped with a intrinsically safe pump(s) capable of delivering a total flow of 500 gallons per minute (gpm) of either free product, groundwater, or mixture of both. A manifold will be provided to connect the drain lines to a single discharge line. The dewatering system will discharge to a minimum 20,000 gal load equalization storage tank (LET).~~

~~A centrifugal pump will be connected to the drain port of the LET to transfer groundwater/free product to an oil/water separator system. This centrifugal pump will be capable of pumping to the oil/water separator at a maximum flowrate of 500 gpm.~~

~~As part of the installation of the dewatering system, an additional drain line will be installed on the eastern side of the vertical isolation barrier. The drain line will be installed similar to the drain lines discussed above but at a constant depth of 7 ft bls unless otherwise directed by the Navy. This drain line is being placed for potential use in future remedial operations.~~

~~Dewatering of the excavation shall be in accordance with the Technical Specification for Dewatering Services (Appendix G).~~

#### **~~4.6.2 Load Equalization Tank~~**

~~A minimum 20,000 gal LET will be provided to contain the drain line effluent and provide equalization of the hydraulic load to the OWS. External spill controls will be in place to direct any leakage or spillage back into the area of excavation.~~

#### **~~4.6.3 Oil Water Separator~~**

~~The groundwater/free product from the LET will be pumped to an OWS for separation and removal of any free product. The OWS will process a maximum 500 gpm with internal storage capacity of the oil. The separated product will be pumped from the OWS containment tank to a separate 5,000 gal free product recovery tank. When the 5,000 gal tank is approximately 80% full, the contents will be manually (i.e., manual activation of transfer pump) transferred to a 10,000 gal tank (e.g., tanker truck). Upon filling the 10,000 gal tank, a sample of the contents will be taken for characterization as indicated in Section 5.0. The contents will be stored in the tank truck until disposal is directed by the Navy. Disposal will be to the NTFF product recovery tank (Navy Recovery Tank 136). The OWS effluent will be pumped to the temporary aboveground transport pipeline (see Section 4.6.4) which discharges into an existing 12 in. sanitary sewer. The sanitary sewer discharges into the existing Public Works Center (PWC) treatment plant.~~

#### **~~4.6.4 Spill Prevention and Control~~**

~~Provisions for spill prevention and control will be used during the transfer of free product. Provisions will include:~~

- ~~Perform level checks in 5,000 gal free product recovery tank and 10,000 gal tank prior to each transfer.~~
- ~~Manual transfer (with full-time attendant) of free product from 5,000 gal free product recovery tank to 10,000 gal tank~~
- ~~Continuous backup storage: A second 10,000 gal tank will be available onsite as the first 10,000 gal tank is filling.~~
- ~~Surveillance monitoring: 5,000 gal and 10,000 gal tanks will be checked to ensure that overflow conditions do not occur.~~
- ~~Spill Mitigation Equipment (e.g., absorbent materials)~~
- ~~Notification: Immediate notification to the NAS Cecil Field Environmental personnel if spill occurs.~~

~~Other provisions and procedures will be discussed with the Navy prior to implementation of the transfer operation.~~

#### **~~4.6.5 OWS Effluent Semi-Permanent Pipeline~~**

~~The 6 in. diameter PVC OWS effluent pipeline will be designed and sized to provide a minimum 500-gallon flowrate. Per the direction of the Navy, this pipeline will not be constructed with secondary containment. The pipeline will be routed to tie to the existing 12 in. sanitary sewer north of 10th street along the east side of "D" avenue, north of Lift Station 802.~~

#### **~~4.6.6 Skimming Sumps~~**

~~The large diameter recovery sumps (Section 4.14) will be routinely inspected by Bechtel during dewatering operations for collection of free product. Free product that accumulates will be skimmed and disposed either in the LET or the free product recovery tank.~~

### **~~4.7 CONTAMINATED SOIL EXCAVATION~~**

#### **~~4.7.1 Excavation Interferences~~**

~~Prior to beginning excavation, the designated areas will be checked for existing utilities and other potential interferences. The Bechtel Project Superintendent will perform a walkdown of the areas to be excavated to visually observe locations of manholes, hydrants, valves, open cuts, overhead obstructions, curbs, buildings, etc. and other unusual conditions. NAS Cecil Field personnel will be consulted for as-built locations of underground utilities. In addition, the PWC will be requested to survey and indicate all utilities within the construction site. No excavation will be initiated until the subgrade interference survey is complete.~~

#### **~~4.7.2 Limits of Excavation~~**

~~The limits of excavation for the NTFF are indicated in Figure 1 Appendix A. The limits have been defined to include all areas within the construction area and any contaminated soils west of~~

~~the fence line to the practicable limit of excavation defined by interferences. The vertical extent of excavation is a maximum of 5 ft bls.~~

#### ~~4.7.4 Existing Facility Demolition~~

~~The existing valve house and UST 70 within the limits of excavation will be demolished. All resulting debris and rubble will be transported and disposed of at a location as determined by the appropriate Navy personnel.~~

~~UST 70 is a concrete tank (approximately 6 ft. long, 3 ft. wide, and 4 ft. deep with metal cover and valves) that contained petroleum product. The tank is no longer used.~~

~~Prior to closure of UST 70, Bechtel will provide a minimum 36 hour notification to the Navy. Subsequent notification to the City will be executed by the Navy. The Navy will provide the required notifications of closure to the City prior to removal of the UST. Closure shall be conducted in accordance with FAC 17 761.~~

#### ~~4.7.5 Material Loading and Transport~~

~~As contaminated soil is excavated, the material will be loaded into trucks for transport to the Contaminated Stockpile Area. Loading and unloading operations will be conducted in a highly controlled manner to prevent contamination of transport vehicles. Bechtel will verify that transport trucks are free of contamination before release from the loading/ unloading area. The transport trucks will be provided with drape curtains, etc. during the loading process to minimize migration of contaminated soil. Additionally, the transport truck beds will be made watertight either through the use of tailgate gaskets or material containment liners to prevent liquid leakage during transport of saturated material.~~

~~All material will be loaded, transported, and off loaded in accordance with the Technical Specification for Onsite Transportation of Contaminated Materials, Appendix D.~~

~~For those areas of the transportation route which cross NAS roadways, a permanent flagman will be stationed at each individual location to direct traffic. This effort will be coordinated with the appropriate Navy personnel.~~

#### ~~4.7.6 Erosion and Sediment Control~~

~~During construction activities, the excavation areas will be maintained to preclude erosion and sediment runoff. The controls will be consistent with all local, state, and federal requirements.~~

### ~~4.8 TRANSPORT VEHICLE AND EQUIPMENT DECONTAMINATION FACILITY~~

~~Transport vehicles and equipment determined to be contaminated will be directed to the temporary decontamination facility located at the existing truck rack. The decontamination facility will be temporary and provide a location to pressure wash and remove contaminated soil from vehicles and equipment. The facility will include a liner that covers the concrete slab of the existing truck rack.~~

~~All water generated as a result of decontamination activities will be containerized in a temporary storage tank and disposed of in accordance with the provisions of Section 6.0.~~

#### **~~4.9 MONITORING WELL ABANDONMENT~~**

~~Prior to soil excavation, monitoring wells located within the limits of excavation will be abandoned. The well riser will be terminated at 5 ft bls and the riser filled with bentonite grout. All well abandonment will be in accordance with applicable local, state, and federal regulations. Required well closure permits and notification will be the responsibility of the Navy's CLEAN contractor, ABB Environmental Services, Inc.~~

#### **~~4.10 SOIL STOCKPILE CONSTRUCTION~~**

##### **~~4.10.1 Contaminated Stockpile Construction~~**

~~Contaminated soil excavated from the NTFF will be stored in the temporary contaminated soil stockpile.~~

~~The area designated for the contaminated soil stockpile will be cleared as indicated in Section 4.2. Once cleared, the site will be graded as required. A security fence with warning signs will be installed around the perimeter of the stockpile area. A 30 mil High Density Polyethylene (HDPE) liner will be placed to contain the material. The contaminated soil stockpile will be protected daily with a temporary 10 mil (minimum) cover with nylon scrim. The cover will be provided to totally cover the contaminated soil stockpile and secondary containment around the stockpile. The specified cover will be such that the effort to remove and apply the cover during daily activities is minimal. The cover will be secured in place at the end of daily operations, and removed prior to the start of activities the following day.~~

~~The contaminated soil stockpile site and liner will be constructed so that leachate will be collected in an internal low point (sump) and removed for disposal in the wastewater treatment plant. A pipe will be provided at the sump for periodic pumping and removal of leachate. Leachate removed will be contained and disposed as directed by the Navy. Runoff resulting from the stockpile cover will be directed to the existing land surface and distributed to minimize erosion.~~

~~The contaminated soil stockpile will be sized to provide containment for 100 percent of the excavated soil. It is assumed that as material is being excavated, previously excavated soil will have been sampled; is undergoing treatment in the thermal unit; and is subsequently transferred to the clean soil stockpile. The contaminated material will be placed and managed in discrete units until post thermal treatment analytical sampling is complete. The contaminated soil removed from the NTFF will be sampled prior to thermal treatment in accordance with the frequency specified in Table 4-1. This sampling is required to provide the necessary analytical information for compliance with permit requirements of a low temperature thermal treatment unit. Analytical requirements for contaminated soil prior to treatment are defined in Section 5.0 of this IRWP.~~

~~Prior to placing any soil material in the stockpile, all excavated soil will be screened to remove particles two inches or greater in size. This will be performed to comply with material requirements of the low temperature thermal desorption treatment unit. Depending on the nature of the soils excavated, it may be necessary to blend various batches of excavated soil to provide~~

~~appropriate material for the treatment unit. Any required screening and blending of the soil material will be the responsibility of the thermal treatment subcontractor.~~

#### **~~4.10.2 Clean Stockpile Construction~~**

~~Contaminated soil which has been successfully treated in the thermal desorption unit will be placed in the clean soil stockpile area.~~

~~The area designated for the clean soil stockpile will be cleared as indicated in Section 4.2. Once cleared, the site will be graded as required. A 30 mil HDPE liner will be placed to contain the material. The clean soil stockpile will also be protected daily with a temporary 5 mil (minimum) cover. The specified cover will be such that the effort to remove and apply the cover during daily activities is minimal. The cover will be secured in place at the end of daily operations, and removed prior to the start of activities the following day. The design and construction of the site, liner, and cover will be such that runoff resulting from the stockpile will be directed back into the excavation at NTFF.~~

~~The clean soil stockpile area will be sized to provide containment for approximately 100 percent of the treated soil. Units of thermally treated soil for which representative samples have been taken will be stockpiled. Requirements for sampling of treated soil are defined in Section 5.0.~~

~~Sampling results for thermally treated soil will be compared with those criteria listed in Table 4.2. If results indicate that a unit of soil does not meet the clean criteria for total volatile organic aromatics (VOAs) and total recoverable petroleum hydrocarbons (TRPH), the soil will be returned to the thermal treatment unit for additional treatment. Secondly, although preliminary indications are that metals will not be of concern, treated soil will be analyzed for total metals. Soil that fails the clean soil criteria for total metals will be analyzed using the toxicity characteristic leaching procedure (TCLP). Units of soil which fail to meet the clean soil criteria for total metals and/or TCLP metals will be segregated from the clean soil stockpile and will be controlled, inspected, and maintained as hazardous waste, as discussed in Section 6.0. Soil material which fails TCLP will be controlled and transported offsite to a licensed solid waste disposal facility or as directed by the Navy.~~

### **~~4.11 LOW TEMPERATURE THERMAL DESORPTION~~**

#### **~~4.11.1 Treatment Objectives~~**

~~Thermal treatment requires that the treatment of the soil reduces total petroleum hydrocarbon contamination to those parameters specified in FAC 62 775 which are shown in Table 4.2.~~

#### **~~4.11.2 Treatment Operations~~**

~~The thermal treatment subcontractor will be required to perform treatment operations in accordance with performance objectives outlined in the Technical Specification for Thermal Treatment Services, Appendix E. The subcontractor is required to retrieve material from the contaminated soil stockpile, screen the soil as necessary, blend the soil as necessary, load the soil into the thermal treatment unit's hopper, thermally treat the soil, sample the soil in accordance~~

Table 4-1  
Composite Samples Quantities Prior to Thermal Treatment<sup>a</sup>

Amount of Soil		Quantity of Composite Samples
by Volume (cubic yards)	by Weight (tons)	
Less than 100	Less than 140	1
100 to 500	140 to 700	3
500 to 1000	700 to 1400	5
For each additional 500	For each additional 700	1

<sup>a</sup>From FAC 17-775.410, Table II

~~with FAC 62-775, and place the material in the clean soil stockpile. The estimated volume of soil from NTFF requiring treatment is approximately 11,028 yd<sup>3</sup>. This estimate volume includes a 12 percent swell factor.~~

~~Bechtel will perform post-treatment confirmatory sampling of 15 percent of subcontractor's samples.~~

#### **~~4.11.3 Thermal Treatment Regulatory Requirements~~**

~~Regulatory requirements for treatment of petroleum hydrocarbon contaminated soils by thermal desorption are discussed in the Technical Specification for Thermal Treatment Services, Appendix E.~~

~~If particular results indicate that a unit of soil does not meet the clean criteria for total volatile organic aromatics (VOAs) and total recoverable petroleum hydrocarbons (TRPH), the soil will be returned to the thermal treatment unit for additional treatment. Secondly, although preliminary indications are that metals will not be of concern, treated soil will be analyzed for total metals. Soil that fails the clean soil criteria for total metals will be analyzed using the toxicity characteristic leaching procedure (TCLP). Units of soil which fail to meet the clean soil criteria for total metals and/or TCLP metals will be segregated from the clean soil stockpile and prevented from use as backfill. Soil material which fails the TCLP criteria will be controlled, inspected, and maintained as hazardous waste, as discussed in Section 6.0. Soil material which fails only total metals will be controlled and transported offsite to a licensed solid waste disposal facility or as directed by the Navy.~~

#### **~~4.12 BACKFILL~~**

~~Backfill for NTFF will be performed simultaneous to excavation. Backfill will be in accordance with Technical specification for Uncontaminated Earthwork, Appendix F, or as specified in this IRWP. A separation distance will be maintained between the toe of slope for excavation and the toe of slope for backfill to prevent cross-contamination. Compaction requirements for backfill varies from 90% Standard Proctor to 95% Standard Proctor (ASTM D698).~~

##### **~~4.12.1 Borrow Source~~**

~~An acceptable borrow source will be identified and subsequent samples provided to a geotechnical testing subcontractor for moisture content, organic carbon, and moisture density relationships. Backfill material for NTFF shall be well-graded granular soil, consisting of silica sand or other approved materials conforming to Florida Department of Transportation Standard Specifications for Road and Bridge Construction, section 120-7, Materials for Embankment and Section 902-2, Silica Sand. Backfill shall contain less than 0.5 percent organic carbon as measured in accordance with ASTM D2074-87. Moisture density testing shall be in accordance with ASTM D698-91. A minimum of three samples from the potential borrow source, representing the potential stockpile or excavation area for the project, shall be tested for moisture density relationship and organic content prior to being used in construction. Backfill shall be supplied at a moisture content within plus/minus 4 percent of optimum moisture to facilitate compaction.~~



Table 4-2  
Criteria for Thermally Treated Clean Soil<sup>a</sup>

Parameter	Cleanup Level
Total Volatile Organic Aromatics	100 µg/kg
Total Recoverable Petroleum Hydrocarbons	10 mg/kg or if exceeded then go to <sup>b</sup> below

Metals	TCLP <sup>c</sup>	Total <sup>d</sup>
Arsenic	5 mg/l	10 mg/kg
Barium	100 mg/l	4940 mg/kg
Cadmium	1 mg/l	37 mg/kg
Chromium	5 mg/l	50 mg/kg
Lead	5 mg/l	108 mg/kg
Mercury	.2 mg/l	23 mg/kg
Selenium	1 mg/l	389 mg/kg
Silver	5 mg/l	353 mg/kg

<sup>a</sup>From FAC 17-775.

<sup>b</sup>If exceeded, then the Total Recoverable Petroleum Hydrocarbons will not exceed 50 mg/kg (EPA Draft Method 3540/9073) provided the total of the Polynuclear Aromatic Hydrocarbons does not exceed 1 mg/kg (EPA Method 8100, 8250, 8270, or 8310) and the total of the Volatile Organic Halocarbons does not exceed 50 µg/kg (EPA Method 5030/8021 or 5030/8010).

<sup>c</sup>Toxicity Characteristic Leaching Procedure (EPA Method 1311).

<sup>d</sup>The acid digestion procedure by EPA Method 3050 will be used to prepare soil samples for total metal analyses except mercury.

~~Prior to backfilling NTFF, an appropriate amount of 1 1/2" to 2" diameter crushed stone may be provided as a bottom layer in order to stabilize saturated material resulting from groundwater encroachment within the open excavation. If required, this layer of crushed stone will provide the means to achieve the desired compaction. Backfilling with a layer of gravel will be at the discretion of the Bechtel Project Superintendent. Backfill material shall be compacted in lifts of approximately 12 in.es.~~

#### **~~4.12.2 Geotechnical Field Testing~~**

~~During earthwork construction, an onsite soils technician will perform inplace soil density testing to confirm compliance with the specified compaction parameters. Pre-determined moisture density relationships established for the borrow source material will be used as a baseline for field density testing. Field density testing shall be performed in accordance with ASTM D1556-90 (Sand Cone Method) or ASTM D2922-91 and ASTM D3017-88 (1993) (Density of Soil and Water Content of Soil by Nuclear Method). Field density testing will be performed at a maximum frequency of one test per 200 cubic yards of material placed and a maximum of one test per day while work is in progress.~~

#### **~~4.14 LARGE DIAMETER RECOVERY SUMPS~~**

~~Additional scope for the NTFF includes installation of 36 in. diameter sumps above the eastern most drain line, east of the Vertical Isolation Barrier (Section 4.5). The sumps will be installed at a depth of 6 ft in areas where free product was detected in the CAR. A total of five sumps is estimated but may vary depending on field conditions.~~

~~Sumps will be installed when installation of the barrier is complete but prior to startup of dewatering operations.~~

### **~~5.0 SAMPLING AND ANALYSIS PLAN~~**

~~This section describes the sampling and analysis for field screening of free product, and low temperature thermal treatment of contaminated soils at NTFF. Sampling methodology and procedures described in this Sampling and Analysis Plan (SAP) are based on FDEP requirements as found in the Florida Department of Environmental Protection *Standard Operating Procedures for Laboratory Operations and Sample Collection Activities* (DERQA-001/92) and *Quality Assurance Standard Operating Procedures for Petroleum Storage System Closure Assessments* and USEPA Region IV SOPs. EPA ASL Level III data will be required for free product characterization sampling, thermal treatment sampling, and waste management sampling to determine that remediation and/or treatment goals have been achieved.~~

#### **~~5.1 SAMPLING PROTOCOL~~**

##### **~~5.1.1 Decontamination~~**

~~Sampling equipment will be decontaminated prior to collection of each sample. Decontamination will be completed in accordance with Section 4.1, "Decontamination," of FDEP's *Standard Operating Procedures for Laboratory Operations and Sample Collection Activities* and USEPA Region IV SOPs. Used decontamination fluids will be containerized, stored and discharged to the wastewater treatment plant as directed by the Navy.~~

### **5.1.2 Collection**

~~Sampling, with the exception of field screening, will be performed in accordance with Section 4, "Sampling Procedures," of FDEP's *Standard Operating Procedures for Laboratory Operations and Sample Collection Activities*. Field screening will be performed in accordance with Section IV, "Field Measurements," of FDEP's *Quality Assurance Standard Operating Procedures for Petroleum Storage System Closure Assessments*.~~

### **5.1.3 Sample Identification**

~~Sample identification will be in accordance with Navy RAC Project Procedure 6003, "Sample Identification and Data Encoding."~~

### **5.1.4 Logbooks**

~~Field logbooks will be used for recording all field activities. Entries will include sufficient detail to reconstruct all significant activities. Logbook entries will be completed in accordance with the minimum requirements for recordkeeping included in Section 5.0, "Sample Custody and Documentation," of FDEP's *Standard Operating Procedures for Laboratory Operations and Sample Collection Activities* and Bechtel Project Procedure 6004, "Field Logbook Management." This SOP includes the minimum requirements for recordkeeping.~~

### **5.1.5 Chain of Custody Records**

~~In order to maintain sample traceability, each sample for offsite analysis will be properly documented on a chain of custody record. Chain of custody documentation will be completed in accordance with Section 5.3, "Custody Documentation Requirements for Field Operations," of the FDEP's *Standard Operating Procedures for Laboratory Operations and Sample Collection Activities* and Bechtel Project Procedure 6005, "Chain of Custody Record Procedure."~~

### **5.1.6 Packaging and Holding Times**

~~Sample volume requirements, frequencies, preservation techniques, minimum holding times, and container material requirements for samples are given in Table 5-1. The Project Superintendent is responsible for ensuring that a sufficient volume of each sample is collected and placed in the appropriate container with the proper preservation.~~

~~The preparation of all sampling containers and the container types, preservatives, and holding times are specified in the FDEP's *Standard Operating Procedures for Laboratory Operations and Sample Collection Activities* and in Bechtel Project Procedure 6010, "Sample Container Preservation and Aliquot Requirement." Section 4.4, "Sample Handling," of the FDEP standard operating procedures contains the recommended container, preservation, and holding times for water, wastewater, soil, and sediment samples. Sample containers will meet all specifications outlined in the above mentioned procedures.~~

### **5.1.7 Contract Compliance Screening and Data Processing**

~~Analytical laboratory results for all confirmatory analyses will be contract compliance screened (CCS) upon receipt. This screen will verify and document the completeness of the data~~

~~deliverable, the adherence to nationally recognized holding time criteria and the use of appropriate analytical methodology.~~

~~Electronic data accompanying the hardcopy data deliverable will not be loaded into the project database. All analytical data following the CCS will be forwarded to intended data recipient in hardcopy only.~~

## **5.2 FIELD SAMPLING AND ANALYSIS**

~~Samples identified in this section will be collected in accordance with FDEP's standard operating procedures as outlined in Section 4.3.4, "Soil Sampling Procedures." Analysis of these samples will be in accordance with Florida Department of Regulation *Standard Operating Procedures for Laboratory Operations and Sample Collection Activities*, Sections 5.0 through 10.0 and Bechtel Sampling Project Procedure. Table 5-1 provides a summary of the data requirements and analytical parameters for samples to be collected from NTFF.~~

### **5.2.1 Field Sampling of Free Product**

~~Field sampling of recovered free product generated from use of the oil/water separator and referred to in Section 4.6.3 will be collected and analyzed for waste oil characterization and metals in accordance with 40 CFR 279.11. Analytical parameters are provided in Table 5-1.~~

### **5.2.2 Thermal Treatment Soil Sampling**

~~Thermal treatment sampling includes samples collected prior to and following thermal treatment. Sample collection will be performed in accordance with Section 4.3.4, "Soil Sampling Procedures," of the Florida Department of Regulation *Standard Operating Procedures for Laboratory Operations and Sample Collection Activities* unless otherwise specified. Prior to thermal treatment, composite samples will be collected. The frequency with which composite samples are to be collected is based on the expected quantity of material to be treated (see Table 4-1).~~

~~The composite samples will be analyzed for volatile organic aromatics, total recoverable petroleum hydrocarbons, volatile organic halocarbons, and metals according to the methods included in Table 5-1. Each composite sample will consist of soil samples collected from a minimum of four locations, with the exception of volatile organics for which composite samples will not be collected. Each sample shall be collected from locations equally distributed throughout the soil surface area and from a depth of at least six inches below the surface. This soil sampling and analyses procedure is in accordance with FAC 62-775.410(3).~~

~~After thermal treatment, a soil sample will be collected at least hourly and composited over an eight operational hour maximum time interval or at least once every 400 tons, whichever is less. Each composite sample will be analyzed for parameters listed in Table 5-1. This procedure and analyses are in accordance with FAC 62-775.410(5) and FAC 62-775.400.~~

### **5.2.3 Sampling of Decontamination Water**

~~Sample collection will be performed in accordance with Section 4.2, "Aqueous Sampling Procedures," of the Florida Department of Regulation *Standard Operating Procedures for*~~

~~Laboratory Operations and Sample Collection Activities. Samples will be analyzed for the parameters listed in Table 5-1.~~

## 5.0 WASTE MANAGEMENT

Waste management practices, as defined in the Program Hazardous Waste Management Plan, will be used as guidance and appropriately followed for this work. Waste management will be performed as described in the plan and coordinated with Navy personnel.

Hazardous waste is not expected to be found; however, if identified it will be managed in accordance with RCRA, 40 CFR Parts 260, 261, 262, 264, 265, 270, and 271. Hazardous waste will not be offered to any transporters or treatment, storage, or disposal facilities that do not have an EPA identification number. It should be noted that there is no anticipated hazardous waste that will be encountered. This is based on previous site characterization data and the history of the site.

~~There are two types of waste management activities: (1) the soils generated during the excavation and installation of the vertical barrier wall and dewatering laterals; (2) the free product and contaminated groundwater recovered during dewatering.~~

~~To minimize the amount of materials that must eventually be disposed, waste minimization practices will be implemented during operations. These practices will include, but not be limited to:~~

- ~~(1) No extraneous materials taken into contamination control areas;~~
- ~~(2) Decontamination and free release of equipment used to support onsite activities, to the extent practicable;~~
- ~~(3) Use of consumables that can be compacted or otherwise volume reduced, to the extent practicable.~~

~~All PPE will be disposed by placing the PPE in double plastic garbage bags and disposing of it in a licensed Subtitle D landfill.~~

~~Stormwater runoff and runoff controls will be implemented to prevent offsite migration of sediment or contaminated stormwater during site activities.~~

~~Water generated during decontamination activities will be containerized in a temporary holding tank. Decontamination water will be routed through the OWS and then discharged to the sanitary sewer system.~~

~~If any free product is encountered during the excavation, a skimmer pump will be used and the recovered free product mixed with the fluids in the LET will be sent to the OWS with subsequent transfer of free product to the Navy's Recovery Tank 136.~~

~~Any nonhazardous solid waste that is generated as a result of mobilization and clearing activities will be properly disposed onsite or offsite as directed by the Navy. The removed sanitary sewer~~

~~line and water line will be decontaminated at the temporary decontamination facility by pressure washing, then disposed as directed by the Navy, along with the valve house debris and rubble.~~

## **6.0 SAFETY AND HEALTH**

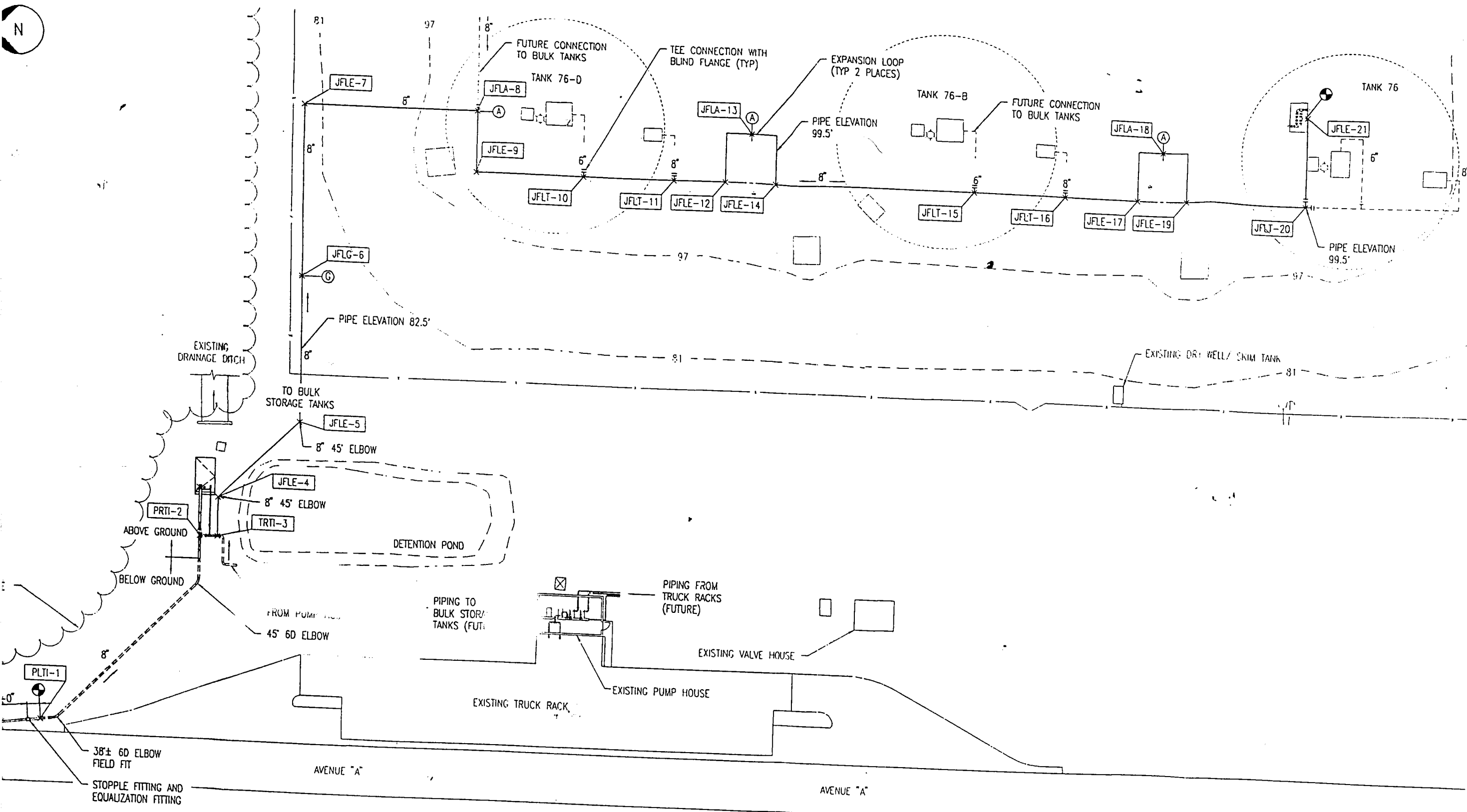
A Program Safety and Health Plan (PSHP) defines policies for work on the Navy RAC Project. A Site Safety and Health Plan (SSHP) has been prepared for Navy RAC bases. Addendum No. 18 to the SSHP, which is provided separately, defines task-specific requirements for interim remedial action activities at the NTFF.

## **7.0 QUALITY CONTROL PLAN**

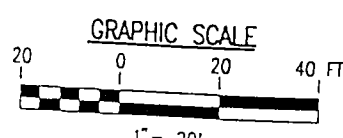
~~Quality control (QC) samples will be collected during sampling activities and will be used as a means of evaluating data quality in terms of precision and accuracy. QC checks also verify that sampling, handling, and analysis does not introduce contaminants in the sampling process. Section 5.0, Sampling and Analysis Plan, addresses the minimum field QC sampling frequency. A task specific quality control plan is provided separately.~~

## **APPENDIX A**

### **PIPE RELOCATION PLAN AND PIPELINE RELOCATION COORDINATION AND LAYOUT PLAN (ENTERPRISE, 1994)**

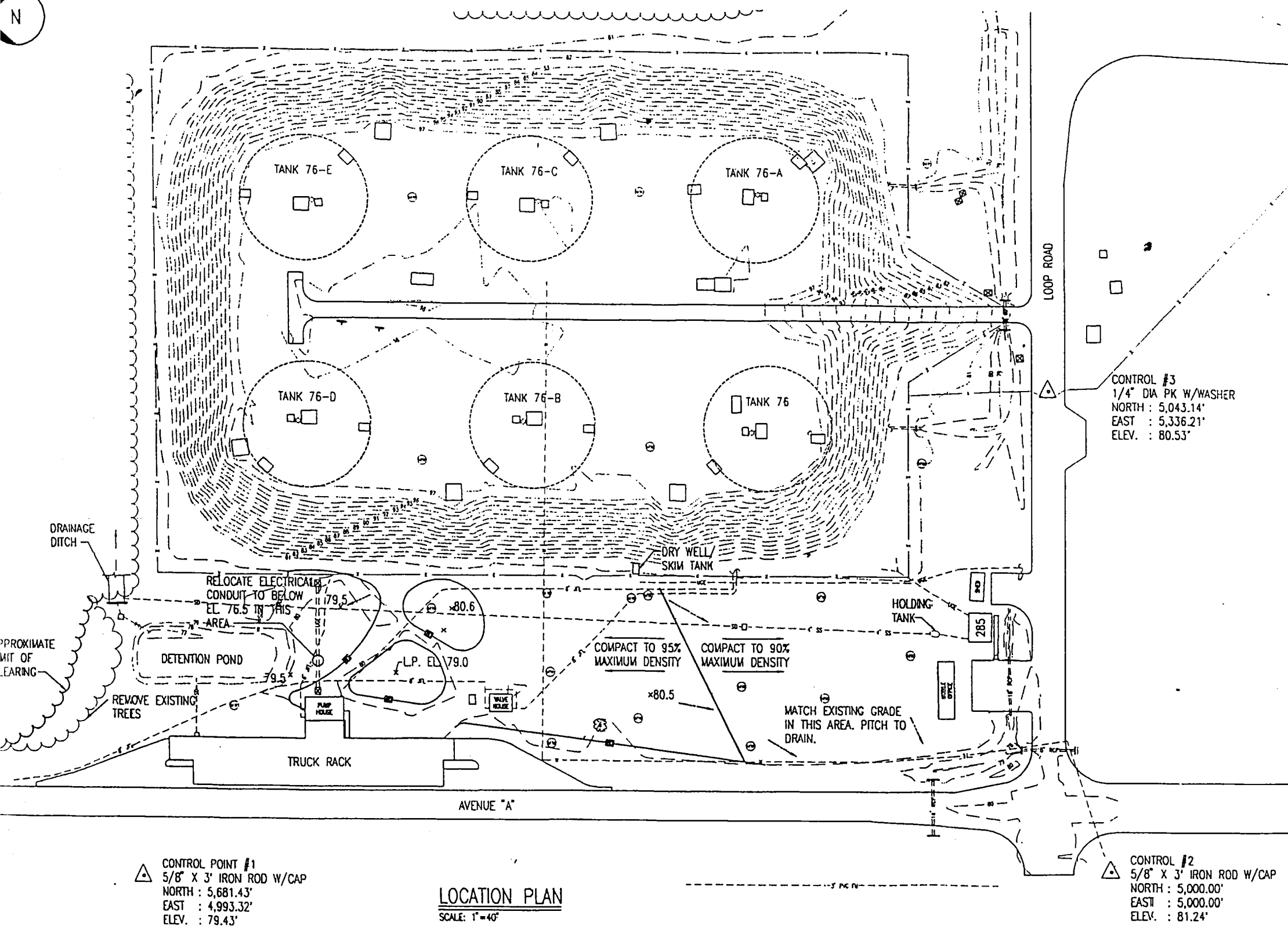


- LEGEND**
- |  |                      |  |                           |
|--|----------------------|--|---------------------------|
|  | PIPELINE TIE-IN      |  | FUTURE PIPING             |
|  | JET FUEL LINE GUIDE  |  | PIPING TO BE PROVIDED     |
|  | JET FUEL LINE ANCHOR |  | UNDERGROUND STORAGE TANKS |
|  | JET FUEL LINE TEE    |  | CONTOUR LINES             |
|  | JET FUEL LINE ELBOW  |  | UNDERGROUND PIPING        |
|  | PIG RECEIVER TIE-IN  |  |                           |
|  | TRUCK RACK TIE-IN    |  |                           |
|  | PIPELINE ANCHOR      |  |                           |
|  | PIPELINE GUIDE       |  |                           |
|  | CONNECT TO EXISTING  |  |                           |



REVISIONS		APPROVED		DATE	
NO.	DESCRIPTION	BY	DATE	BY	DATE
1	AS SHOWN				
SOUTHERN DIVISION CHARLESTON, S.C.		RECORD DRAWING DATE		DRAWING PLOTTED 12-05-94	
PIPELINE RELOCATION PLAN		CODE NO. 80091		BY: JACOBSON, R.A.	
PIPELINE RELOCATION PLAN		DRAWING SIZE: 0		DATE: 12-05-94	
SHEET NO. 06		CONSTN. CONTR. NO.		DATE: 12-05-94	
167447		DATE: 12-05-94		DATE: 12-05-94	
NAAAC DRAWING NO.		DATE: 12-05-94		DATE: 12-05-94	





GENERAL NOTES:
















HORIZONTAL & VERTICAL CONTROL:

1. SURVEYING & MAPPING PERFORMED BY ENTERPRISE ENGINEERING, INC. IN NOVEMBER, 1994.
2. HORIZONTAL CONTROL IS BASED ON AN ARBITRARY COORDINATE SYSTEM ESTABLISHED BY ENTERPRISE ENGINEERING, AND DEFINED BY CONTROL POINTS 1, 2, & 3.
3. VERTICAL DATUM IS BASED ON BM #33 EL. 77.89 AS INDICATED ON P.W. DRAWING NO. SU-012.
4. UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR MUST FIELD VERIFY LOCATION AND EXISTANCE OF ALL UTILITIES IN AREA TO BE EXCAVATED PRIOR TO ANY EXCAVATION.

WORK NOTES:

1. BACKFILL MATERIAL SHALL BE WELL GRADED GRANULAR SOIL CONFORMING TO FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (FDOT STANDARD SPEC. 1991 EDITION) SECTION 120-7 MATERIALS FOR EMBANKMENT. BACKFILL SHALL BE PLACED IN LAYERS NOT MORE THAN 12 INCHES COMPACTED THICKNESS. BACKFILL SHALL BE COMPACTED TO THE DENSITY SHOWN. MAXIMUM DENSITY OF MATERIAL SHALL BE DETERMINED BY ASTM D698.
2. FINISHED GRADES ARE TOP OF COMPACTED BACKFILL.
3. EXISTING STORM DRAIN AND LEACH FIELD SERVING BUILDING 285 SHALL BE REMOVED. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY PIPING AND APPURTENANCES TO CONNECT BUILDING 285 TO THE FACILITIES EXISTING SEWER SYSTEM.
4. EXISTING MONITORING WELLS SHALL BE ABANDONED IN PLACE.
5. CONTRACTOR SHALL PROVIDE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

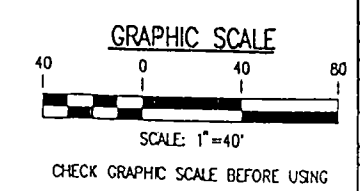
LEGEND:

- |   |                               |
|---|-------------------------------|
|  | PROVIDE DRAINAGE PATH         |
|  | EXISTING FENCING              |
|  | EXISTING CONTOURS             |
|  | EXISTING SANITARY SEWER       |
|  | EXISTING SANITARY FORCED MAIN |
|  | EXISTING JET FUEL PIPING      |
|  | EXISTING UNDERGROUND ELECTRIC |
|  | EXISTING TREE LINE            |
|  | EXISTING CULVERTS             |
|  | EXISTING MONITORING WELLS     |
|  | EXISTING LIGHT POLES          |
|  | EXISTING POST INDICATOR VALVE |
|  | EXISTING TREE                 |
|  | EXISTING CATCH BASIN          |
|  | EXISTING ELECTRICAL PULL BOX  |

LOCATION PLAN  
SCALE: 1" = 40'

COORDINATE TABLE:

CONTROL POINTS:				PIPING POINTS: (SEE SHEET M-2)			PIPING POINTS: (SEE SHEET M-2)		
POINT	NORTHING	EASTING	ELEVATION	POINT	NORTHING	EASTING	POINT	NORTHING	EASTING
CONTROL POINT #1	5,000.00	5,000.00	81.24'	JFLG-6	5,664.47	5,244.20	JFLT-16	5,357.30	5,289.28
CONTROL POINT #2	5,681.43	4,993.32	79.43'	JFLE-7	5,664.47	5,314.28	JFLE-17	5,327.47	5,289.28
CONTROL POINT #3	5,043.14	5,336.21	80.53'	JFLA-8	5,594.47	5,314.28	JFLA-18	5,317.47	5,309.28
<u>PIPING POINTS: (SEE SHEET M-2)</u>				JFLE-9	5,594.47	5,289.28	JFLE-19	5,307.47	5,289.28
POINT	NORTHING	EASTING		JFLT-10	5,551.69	5,289.28	JFLT-20	5,258.09	5,289.28
PITI-1	5,767.67	5,050.64		JFLT-11	5,515.10	5,289.28	JFLE-21	5,258.09	5,325.50
PRTI-2	5,703.84	5,136.70		JFLE-12	5,494.47	5,289.28			
TRTI-3	5,696.67	5,136.70		JFLA-13	5,484.47	5,309.28			
JFLE-4	5,696.67	5,152.70		JFLE-14	5,474.47	5,289.28			
JFLE-5	5,664.47	5,184.90		JFLT-15	5,393.81	5,289.28			

[illegible]

**APPENDIX B**

**PIPELINE RELOCATION REPORT FOR NORTH FUEL FARM**  
**NAS CECIL FIELD**  
**ENTERPRISE ENGINEERING, INC.**  
**NOVEMBER 1994**

**NOTE:** This is not a Bechtel controlled document and therefore cannot be revised by Bechtel. This document is being red-lined to reflect as-built conditions based upon modifications to the scope of work as directed by the US Navy, ABB Environmental Services, or Enterprise Engineering.

PIPELINE RELOCATION  
NAS CECIL FIELD  
JACKSONVILLE, FLORIDA

EEI PROJECT NO. 94-1751.35

PREPARED BY:  
John W. Anna  
Austin H. Watts, P.E.

## TABLE OF CONTENTS

Pipeline Relocation Scope of Work .....	Tab A
Specification Section 15116 - Fuel Pipe Weld and Examination. ....	Tab B
Specification Section 15486 - Fuel Piping .....	Tab C
Half Size Drawings .....	Tab D
Piping Schematic	
Pipeline Relocation Plan	
Coordination and Layout Plan	
Full Size Drawings .....	Tab E
Pipeline Relocation Plan	
Coordination and Layout Plan	

- 29 CFR 1910 Occupational Safety and Health Standards
- 29 CFR 1926 Safety and Health Regulations for Construction
- 49 CFR 195 Transportation of Hazardous Liquid by Pipeline

## 1.2 SUBMITTALS

Submit the following in accordance with Section 01300, "Submittals."

### 1.2.1 SD-08, Statements

- a. Welding procedure specifications G
- b. Nondestructive examination (NDE) procedures G

### 1.2.2 SD-18, Records

- a. Examination records G
- b. Welding procedure qualification records G
- c. Welder performance qualification records G
- d. Welder qualification test reports
- e. NDE and inspection personnel qualification records G

## 1.3 NDE AND INSPECTION PERSONNEL QUALIFICATIONS

The Commercial Inspection or Testing Laboratory inspection and nondestructive testing personnel, including visual inspectors, shall be qualified in accordance with the requirements of ASNT-SNT-TC-1A for Level II or Level III in the applicable nondestructive testing method. An AWS certified weld inspector shall be considered qualified to perform visual inspections only, in lieu of an ASNT Level II visual inspection. Final approval of NDE and weld inspection personnel will be made by the Contracting Officer.

## PART 2 PRODUCTS

### 2.1 WELDING ELECTRODES

#### 2.1.1 Carbon Steel Piping

Gas tungsten arc welding process: AWS 5.4. Shielded metal arc welding process: AWS A5.1 or AWS A5.5, low hydrogen electrodes.

## PART 3 EXECUTION

## 3.1 QUALITY ASSURANCE

Except as modified herein, welding and weld examination shall be performed in accordance, as applicable, with 49 CFR 195, ASME B31.3, ASME B31.4, API STD 1104, and with all recommendations in API RP 1107.

All welding shall be done in strict conformance to submitted and approved welding procedures for joint preparation, alignment, fit-up, cleanliness, use of proper welding materials, proper machine settings and placement of back-up rings to ensure weldments of proper size, profile and mechanical characteristics. No welding shall begin until welding procedure, welder performance, and NDE qualifications have been submitted and approved. For purposes of applicability of regulations, standards, codes and recommended practices, assume the pipeline operates at a stress level in excess of 20 percent of the line pipe's specified minimum yield strength. The Contractor shall have one copy of each of these standards available for review by contractor and government personnel at the jobsite office. With respect to referenced regulations, standards, codes and recommended practices, the terms "employer," "manufacturer," "fabricator" and "erector" mean the Contractor, and the terms "inspector", "company" and "Owner" mean the Contracting Officer or his representative.

## 3.1.1 Welding Procedure and Welder Performance Qualifications

API STD 1104. Qualify all welders on site. Notify the Contracting Officer at least 1 week in advance of the time and place of the tests. Qualify welders and welding procedures in the 6G position. The Contracting Officer shall be furnished a copy of qualified procedures and a list of names and identification symbols of qualified welders.

## 3.1.2 Welder Qualification Tests

API STD 1104 except as modified herein. All welded test segments shall be sent to the Government approved commercial inspection or testing laboratory for test specimen preparation, examinations, and testing. Testing shall include: visual examination, tensile-strength, nick-break, and bend tests. Submit test specimens and test reports to the Contracting Officer. All test specimens shall be obtained and prepared in accordance to API STD 1104, Section 3, Qualification of Welders.

## 3.1.3 Previous Qualifications

At the discretion of the Contracting Officer, welders previously qualified by test within the previous 6 months may be accepted for this contract without requalification if all the following conditions are met:

- a. Copies of the welder qualification test records are submitted and approved.
- b. Testing was performed by an approved testing laboratory, technical consultant, or the Contractor's approved quality control organization.
- c. The welder qualification tests conform to the requirements of API

STD 1104 and this specification and are applicable to welding conditions encountered under this contract.

#### 3.1.4 Welding Procedure Specifications

Root and first weld passes on pipeline joints shall be made using gas tungsten arc welding (GTAW) procedures. GTAW or shielded metal arc welding procedures may be used on remaining passes. If backing rings are to be removed, include a description of the removal process in the specification, including measures taken to prevent damage to interior pipe wall surfaces. Include contingency specifications for welding new pipe to existing pipe of unequal wall thickness, weather conditions under which welding will be permitted and preheat and postheat requirements.

#### 3.1.5 Welding Symbols

Conform to AWS A2.4.

#### 3.1.6 Safety

Conform to ANSI Z49.1, 29 CFR 1910-SUBPART Q, "Welding, Cutting, and Brazing," 29 CFR 1926-SUBPART J, "Welding and Cutting", as well as API standards and recommended practices. When welding to existing fuel piping, continuously monitor pipe interior for the presence of hydrocarbons.

#### 3.1.7 Welder Identification

Assign each welder or welding operator an identifying number, letter, or symbol that shall be used to identify his welds. Each welder or welding operator shall apply his mark adjacent to his weld using an approved rubber stamp or felt-tipped marker with permanent, weatherproof ink or other approved methods that do not deform the metal.

#### 3.1.8 Weather Conditions

Welding shall not be done when weld quality can be affected by weather conditions. The Contracting Officer will decide if weather conditions are suitable for welding.

### 3.2 SUPPORTS

Welding of pipeline supports shall conform to AWS D1.1.

### 3.3 EXAMINATIONS

API STD 1104, except as modified herein. Employ the services of an accredited or government approved commercial inspection or testing laboratory or technical consultant for performance of all weld examinations. The contractor shall provide the Contracting Officer a list of NDE personnel who will be performing tests under this contract. All NDE personnel shall at all times carry certification cards or proof of certification while on site. The extent of required examination shall be as follows:

Weld Type	Visual	Radiographic	Liquid Penetrant
UNDERGROUND CIRCUMFERENTIAL AND LONGITUDINAL BUTTWELDS			
a. Root and intermediate passes (each pass)	100%	---	
b. Completed weld	100%	100%	
ABOVEGROUND CIRCUMFERENTIAL AND LONGITUDINAL BUTTWELDS			
a. Root and intermediate passes (each pass)	100%		
b. Completed weld	100%	10%	
TIE-IN GIRTH WELDS	100%	100%	
SOCKET AND OTHER FILLET WELDS	100%	-	100%

## NOTES:

1. Thickness refers to pressure boundary wall thickness (such as pipe wall, fitting wall, or nozzle wall thickness).
2. Radiographic examination of branch welds shall be performed before any nonintegral reinforcing material is applied.
3. The thickness of butt welds is defined as the thicker of the two abutting ends after end preparation.
4. Liquid penetrant examination shall be performed at the lesser of one-half of the weld thickness or each 1/2 inch of weld thickness and all accessible final weld surfaces.
5. For nondestructive examination of the pressure retaining component, refer to the standards listed in applicable code or the manufacturing specifications.

## 3.3.1 Non-Destructive Examination Procedures

Develop a comprehensive quality assurance and NDE procedures document which demonstrates a thorough knowledge of the weld examination requirements and sufficient planning to coordinate examination with the work. NDE procedures shall include weather conditions in which welding will be permitted and inspection tools such as gauges, equipment and penetrant materials.

## 3.3.2 Additional Visual Examination

- a. Before welding -- for compliance with requirements for joint preparation, placement of backing rings or consumable inserts, alignment and fit-up, and cleanliness.
- b. During welding -- for conformance to the qualified welding procedure, cleaning between passes, complete fusion of each pass and weld quality.



- c. After welding -- for bead reinforcement, undercutting, arc strikes/burns, porosity, overlap, profile, and size of welds.

### 3.3.3 Additional Acceptance Criteria Limits

#### 3.3.3.1 Visual

- a. Convexity of fillet weld surface may be no greater than 10 percent of longest leg plus 0.03 inch (1.0 mm).
- b. Concavity in fillet welds may be no greater than 1/16 inch (2.0 mm).
- c. Fillet weld size may be no less than indicated or greater than 1 1/4 times the minimum specified fillet leg length.

#### 3.3.3.2 Radiography

- a. No indications of cracks, incomplete fusion, slag inclusion beyond allowable limits and inadequate penetration, including inadequate penetration due to high-low shall be permitted.
- b. No elongated indication which has a length greater than:

(1) 1/4 inch (6.0 mm) for "t" up to 3/4 inch (19.0 mm), inclusive;

("t" pertains to the thickness of the weld being examined. If a weld joins two members having different thickness at the weld, "t" is the thinner of these two thicknesses.)

- c. No group of indications in line that have an aggregate length greater than "t" in a length of 12t, except where the distance between the successive indications exceeds 6L where L is the longest indication in the group.
- d. No porosity in excess of that shown acceptable in Appendix A-250, Acceptance Standard for Radiographically Determined Rounded Indications in Welds, ASME BPVC SEC VIII.

### 3.4 NDE EXAMINATION RECORDS

Submit visual, liquid penetrant, and radiographic records. Submit radiographic examination results and original films for Government records including reader sheets, piping diagrams, and film numbering data.

### 3.5 GOVERNMENT REVIEW OF WELDING AND INSPECTION RESULTS

The Government, at the option of the Contracting Officer, may provide a weld inspector for the purposes of reviewing all non-destructive examination

results, for witnessing welding procedure and welder qualification tests, and inspecting welds provided under this contract. The final determination for the necessity for repairs shall be made by the Contracting Officer.

-- End of Section --

## SECTION 15486

FUEL PIPING  
09/93

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

## AMERICAN PETROLEUM INSTITUTE (API)

API SPEC 5L	1992 Line Pipe
API SPEC 6D	1991 (Supp. 1993) Pipeline Valves (Gate, Plug, Ball, and Check Valves)
API STD 607	1985 Fire Test for Soft-Seated Quarter-Turn Valves
API RP 1110	1991 Pressure Testing of Liquid Petroleum Pipelines
API BULL 2209	1978 Pipe Plugging Practices

## AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME/ANSI B16.5	1988 (Errata 1988) (Addenda 1992) Pipe Flanges and Flanged Fittings
ASME/ANSI B16.9	1993 Factory-Made Wrought Steel Buttwelding Fittings
ASME B16.11	1992 Forged Fittings, Socket-Welding and Threaded
ASME B16.21	1978 Nonmetallic Flat Gaskets for Pipe Flanges
ASME B31.3	1990 (Errata 1990) (Addenda 1992) Chemical Plant and Petroleum Refinery Piping
ASME B31.4	(1992) Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols
ANSI/ASME B40.1	1991 (Special Notice 1992) Gauges - Pressure Indicating Dial Type - Elastic Element

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36/A 36M	1991 Structural Steel
ASTM A 53	1990 (Rev. B) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
ASTM A 105/A 105M	1992 Forgings, Carbon Steel, for Piping Components
ASTM A 193/A 193M	1992 Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service
ASTM A 194/A 194M	1992 (Rev. A) Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service
ASTM A 234/A 234M	1992 (Rev. A) Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures
ASTM D 229	1991 Rigid Sheet and Plate Materials Used for Electrical Insulation

#### CODE OF FEDERAL REGULATIONS (CFR)

49 CFR 195	Transportation of Hazardous Liquids by Pipeline
------------	---

#### FEDERAL SPECIFICATIONS (FS)

FS L-C-530	(Rev. C) Coating, Pipe, Thermoplastic Resin
FS L-T-1512	(Rev. A Reinst) Tape, Pressure Sensitive Adhesive, Pipe Wrapping

#### MILITARY SPECIFICATIONS (MIL)

MIL-V-12003	(Rev. F) (Am. 1) Valves, Plug: Cast Iron or Steel, Manually Operated
MIL-P-2441	(Rev. A), (Supp. 1) Paint, Epoxy Polyamide

#### MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY, INC. (MSS)

MSS SP-58	1988 Pipe Hangers and Supports - Materials, Design and Manufacture
MSS SP-69	1991 Pipe Hangers and Supports - Selection and Application

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 30	1990 Flammable and Combustible Liquids Code
NFPA 70	1993 National Electrical Code
NFPA 407	1990 Aircraft Fuel Servicing

1.2 DEFINITIONS ..

In ASME B31.3, ASME B31.4 and NFPA 30 publications, the advisory provisions shall be considered mandatory, as though the work "shall" had been substituted for "should" wherever it appears; reference to the "authority having jurisdiction" and "owner" shall be interpreted to mean the Contracting Officer.

1.3 SUBMITTALS

Submit the following in accordance with Section 01300, "Submittals."

1.3.1 SD-02, Manufacturer's Catalog Data

- a. Pipe G
- b. Valves G
- c. Protective coatings G
- d. Fittings G

1.3.2 Pipeline Repair Record

Contractor shall submit four copies of a pipeline repair record for documentation in accordance with 49 CFR 195. Report shall state repairs were performed in accordance with 49 CFR 195. The record shall be bound and include the statements and records required above as well as the following:

- a. Date, location and description of repair
- b. Pipeline repair procedures
- c. Pipe material certification
- d. Hydrostatic testing procedure, records and certification
- e. Weld inspection results
- f. Miscellaneous field information including photographs (or color photocopies of photographs), drawings, sketches and notes.

#### 1.4 REGULATORY REQUIREMENTS

Conform to the safety and fire regulations of the Station Fire Department when work is in progress. Obtain a "Hot Work" permit each day before performing welding or burning.

### PART 2 PRODUCTS

#### 2.1 SPECIAL REQUIREMENTS

##### 2.1.1 Metal

Metal contacting the fuel shall be stainless steel or aluminum alloy, except as modified herein. Zinc, zinc-coated steel, zinc-coated cast iron, brass, copper, and copper-bearing alloys contacting the fuel shall not be permitted. Carbon steel containing up to a maximum of one percent copper contacting the fuel shall be permitted in carbon steel piping systems.

##### 2.1.2 System

Capacity and efficiency of equipment shall not be less than that indicated. System components, including piping, equipment, valves, and accessories shall be suitable for maximum working pressure of ANSI Class 150 (275 psig at 100 degrees F).

#### 2.2 CARBON STEEL PIPING

##### 2.2.1 Pipe

ASTM A 53, Type E (electric-resistance welded, Grades A or B) or Type S (seamless, Grade A or B), black steel; Weight Class STD (Standard) for pipe sizes larger than 2 inches, Weight Class XS (Extra-Strong) for pipe sizes 2 inches and smaller.

##### 2.2.2 Line Pipe

API SPEC 5L, seamless, submerged-arc weld or gas metal-arc weld; Grade B, black steel, Weight Class STD (Standard) for pipe sizes larger than 2 inches, Weight Class XS (Extra-Strong) for pipe sizes 2 inches and smaller.

#### 2.3 FITTINGS FOR CARBON STEEL PIPING

##### 2.3.1 Threaded Fittings and Socket Welding Fittings

ASME B16.11 and ASTM A105, threaded fitting shall be limited to pressure gauge and relief valve instruments.

##### 2.3.2 Buttwelding Fittings and Tapered Reducing Fittings

ASME/ANSI B16.9, ASTM A 234/A 234M, Type WPB, of the same material and weight as the piping in which fittings are installed.

### 2.3.3 Flanges

ASME/ANSI B16.5, Class 150, Raised Face Type, ASTM A 105/A 105M.

### 2.4 WELDING FOR CARBON STEEL PIPING

See Section 15116

### 2.5 GASKETS, BOLTS, NUTS AND WASHERS

#### 2.5.1 Gaskets

ASME B16.21, composition ring 0.0625-inch thick, of one piece factory cut, resistant to the effects of aviation hydrocarbon fuels and manufactured of fire-resistant materials. Provide full-face gaskets for flat-face flanged joints, and ring gaskets for raised-face flanged joints.

#### 2.5.2 Bolts

ASTM A 193/A 193M, Grade B8. Extend no less than two full threads beyond the nut with the bolts tightened to the required torque. Apply an anti-sieze compound to threads.

#### 2.5.3 Nuts

ASTM A 194/A 194M, Grade 8.

#### 2.5.4 Electrically Isolating (Insulating) Gaskets for Flanges

Provide ASTM D 229 electrical insulating material of 1000 ohms minimum resistance. Material shall be resistant to the effects of aviation hydrocarbon fuels. Provide full face insulating gaskets between flanges. Provide full surface 0.03-inch thick wall thickness, spiral-wound mylar insulating sleeves between the bolts and the holes in flanges; bolts may have reduced shanks of a diameter not less than the diameter at the root of threads. Provide 0.125-inch thick high-strength phenolic insulating washers next to flanges and flat circular stainless steel washers over insulating washers and under bolt heads and nuts. Provide bolts 0.5 inch longer than standard length to compensate for the thicker insulating gaskets and the washers under bolt heads and nuts.

### 2.6 VALVES

Steel body except stainless steel shall be Type 304L or Type 316, and aluminum alloys shall be 3003, 6061-T6, or 356-T6, except as modified in paragraph titled "Special Requirements," in this section, suitable for working pressure of ANSI Class 150 (275 psig at 100 degrees F), with weatherproof housing designed to exclude driving rain and snow for worm-gear operators. Flanged or socket weld end connections, except as modified herein.

#### 2.6.1 Ball Valves

API SPEC 6D, ANSI Class 150, reduced bore. Minimum reduced bore size shall be 55 percent of nominal pipe size. Conform to fire test requirements

of API STD 607. Provide nonlubricated double seated type capable of handling two-way shutoff, with weather-proof worm-gear operators, except valves 6 inches and smaller may be lever operated with 10 positions or infinitely adjustable positions between full open and full close. Valves in carbon steel piping shall have steel bodies with type 316 stainless steel balls. Valves shall have stainless steel stems and trim, and Viton or Teflon seats, body seals, and stem seals. Valves 3-inch and larger shall be flanged. Valves 2-inch and smaller shall be socket weld.

#### 2.6.2 Plug (Double Block and Bleed) Valves

API SPEC 6D and MIL-V-12003 Type III, ANSI Class 150, nonlubricated, resilient, double seated, tapered lift, plug type capable of handling two-way shutoff; steel body, chrome-plated interior, and tapered plug of steel or ductile iron, chrome or nickel plated, supported on upper and lower trunnions, and steel or ductile iron, sealing slips, with Viton seals. Valve design shall permit sealing slips to be replaced from the bottom with the valve mounted in the piping. Valves shall operate from fully open to fully closed by rotation of the handwheel to lift and turn the plug. Valves shall have weatherproof operators with mechanical position indicators and a minimum bore size of 65 percent of nominal pipe size, unless the manufacturer can show an equivalent or greater-flow rate with a lower percent internal cross sectional area. Full port valves shall be located as indicated.

##### 2.6.2.1 Valve Operation

Rotation of the handwheel toward open shall lift the plug without wiping the seals and retract the sealing slips so that clearance is maintained between the sealing slips and the valve body. Rotation of the handwheel toward closed shall lower the plug after the sealing slips are aligned with the valve body and force the sealing slips against the valve body for positive closure. When valve is closed, the slips shall form a secondary fire-safe metal-to-metal seat on both sides of the resilient seal.

##### 2.6.2.2 Relief Valves

ANSI Class 150, steel body. Provide plug valves with automatic thermal relief valves to relieve the pressure buildup in the internal body cavity when the plug valve is closed. Relief valves shall open at 25 psi differential pressure, and discharge to the throat of and to the upstream side of the plug valve.

##### 2.6.2.3 Bleed Valves

ANSI Class 150, steel body valve. Provide manually operated bleed valves that can be opened to verify that plug valves are not leaking when in the closed position. Provide discharge piping so that released liquid can be contained.

#### 2.6.3 Relief Valves

ANSI Class 150, steel body, threaded connections, except as modified herein. Set relief at the pressure indicated. Relief valves shall be suitable for back pressure service.



## 2.7 PIPING ACCESSORIES

### 2.7.1 Pipe Hangers and Supports

MSS SP-58 and MSS SP-69, of the adjustable type, except as modified herein or indicated otherwise. Provide steel pipe hangers and supports. The finish of rods, nuts, bolts, washers, hangers, and supports shall be hot-dip galvanized.

#### 2.7.1.1 Miscellaneous Metal

ASTM A 36/A 36M, standard mill finished structural steel shapes, hot-dip galvanized.

#### 2.7.1.2 Anchors, Bolts, Nuts, Washers and Screws

Hot-dip galvanized steel.

### 2.7.2 Gages

ANSI/ASME B40.1, single style pressure gage for fuel with 4.5-inch dial, liquid filled stainless steel case, stainless steel tube, pressure snubbers, and scale range for the intended service.

## 2.8 PROTECTIVE COATINGS FOR PIPING

### 2.8.1 Protective Coatings for Aboveground Carbon Steel Piping

Shop coat pipe to within 3-inches of ends. Field coat fitting, flanges, valves and accessories. Do not coat stainless steel components. Apply coating as per manufacturers instructions.

#### 2.8.1.1 Shop Coating

Abrasive blast pipe lengths to SSPC SP10. Tape ends and spray apply prime coat MIL-P-24441 formula 152 (white), intermediate coat of MIL-P-24442 formula 151 (grey), and a top coat of MIL-P-24441 formula 152 (white). Apply each coat for a dry film thickness of 3 mils. Total system shall not be less than 8 mils.

#### 2.8.1.2 Field Coating

Power tool clean welds, fittings, and accessories to SSPC SP3. Apply three coats of MIL-P-2441 as above by brush or roller. Touch-up all damage to shop coating.

### 2.8.2 Coatings for Underground Piping

Protective Coatings for Buried Carbon Steel Piping: Provide pipe with FS L-C-530 coating system of factory-applied adhesive undercoat and continuously extruded plastic resin coating; minimum thickness shall be 36 mils for pipe sizes 6 inches and larger.

### 2.8.3 Damaged Areas of Pipe Coating

Provide FS L-T-1512, 20 mils nominal thickness tape over damaged areas.

### 2.8.4 Fittings, Couplings, and Regular Surfaces

Provide FS L-T-1512, 10 mils nominal thickness tape overlapped a minimum one inch over damaged areas.

## 2.9 BONDING

NFPA 70 for materials and workmanship. The fuel piping system shall be bonded in metallic contact to provide electrical continuity to fixed and moving components for grounding the entire system. Provide jumpers to overcome the insulating effects of gaskets, paints, or nonmetallic components. Minimum size ground conductor shall be No. 6, with single covered, flexible, stranded, copper conductor, Type RR-USE. Provide dielectric connection in riser pipe for underground piping protected by impressed current.

## 2.10 BURIED UTILITY WARNING AND IDENTIFICATION TAPE

Provide detectable aluminum foil plastic-backed tape or detectable magnetic plastic tape for warning and identification of buried piping. Tape shall be detectable by an electronic detection instrument. Provide tape in minimum 3-inch width rolls, color coded for the utility involved, with warning and identification imprinted in bold black letters continuously and repeatedly over entire tape length. Use permanent code and letter coloring unaffected by moisture and other substances contained in trench backfill material.

## PART 3 EXECUTION

### 3.1 PREPARATION

#### 3.1.1 Demolition

Remove materials so as not to damage materials which are to remain. Replace existing work damaged by the Contractor's operations with new work of the same construction. The Government will drain the existing piping insofar as practicable with the existing pumps. The Contractor shall be responsible for removing the remaining fuel and sludge, and for cleaning and inerting the piping to make it safe for welding.

### 3.2 INSTALLATION

Provide exterior aviation fuel distribution systems including above ground piping, buried piping, piping in manholes, dispensing hardware and related work. Install piping straight and true to bear evenly on supports. Install valves with stems horizontal or above. Install flanges and unions at valves, connections to equipment, and where indicated. Provide each system complete and ready for operation. Equipment, materials, installation, workmanship, fabrication, assembly, erection, examination, inspection, and testing shall be in accordance with ASME B31.3 and NFPA 30, except as modified herein.

### 3.2.1 Protection Against Hazardous Conditions

The piping and the surrounding area shall be inspected for explosive vapors prior to work and frequently during the course of the work. If, in the opinion of the Contracting Officer, a hazardous condition exists, work shall cease until such condition has been corrected.

### 3.2.2 Safety

NFPA 30 and NFPA 407; safety rules shall be strictly observed. The flash points of fuels in degrees Fahrenheit are as follows:

<u>FUELS</u>	<u>FLASH POINT</u>
Jet Fuel JP-5	Plus 140

### 3.2.3 Connections To Existing Systems

Notify the Contracting Officer in writing at least 15 days prior to the date the connections are required; receive approval before interrupting service. Provide materials required to make connections into existing systems and perform excavating, backfilling, compacting, and other incidental labor as required.

### 3.2.4 Cutting Existing Pipe

Perform the initial cutting of the existing piping with a multiwheel pipe cutter, using a nonflammable lubricant. After cutting, seal the interior of the piping with a gas barrier plug in accordance with API BULL 2209. The interior of the piping shall be purged with carbon dioxide or nitrogen during welding process. The complete method of cutting, sealing, and welding shall be approved in advance of the actual work.

### 3.2.5 Cleaning of Piping

Keep the interior and ends of new piping and existing piping affected by the Contractor's operations thoroughly cleaned of water and foreign matter. Keep piping systems clean during installation by means of plugs or other approved methods. When work is not in progress, securely close open ends of pipe and fittings to prevent entry of water and foreign matter. Inspect piping before placing into position.

### 3.2.6 Pipeline Work

The portion of the work indicated as "pipeline work" shall be performed in accordance to 49 CFR 195 and ASME B31.4. Prehydrotest pipeline materials. Perform welding and inspection as required in Section 15116. Document existing conditions, work performed, and test results as required by 49 CFR 195.

### 3.3 PIPE AND FITTINGS

Inspect, test, and approve piping before burying, covering, or concealing. Provide fittings for changes in direction of piping and for connections. Reducing branch connections in steel piping may be made with forged branch outlet reducing fittings for branches two or more pipe sizes smaller than mains. Branch outlet fittings shall be forged, flared for improved flow where attached to the run, reinforced against external strains, and designed to withstand full pipe bursting strength. Stub type connections are prohibited. Jointing compound for pipe threads shall be polytetrafluoroethylene (PTFE) pipe thread paste. Pipe nipples 6 inches long and shorter shall be Schedule 80 pipe. Make changes in piping sizes through tapered reducing pipe fittings.

#### 3.3.1 Fittings and End Connections

Install socket weld fittings and end connections for sizes 2-inch and less; threaded connections for threaded relief valves, gauges, and threaded connections to equipment; buttwelding fittings and end connections for sizes 2.5 inches and larger; and flanged connections for flanged valves, traps, strainers, and flanged connections to equipment.

#### 3.3.2 Pipe Hangers and Supports

Install additional hangers and supports for the concentrated loads in piping between hangers and supports, such as for valves. Install ASTM A 36/A 36M miscellaneous steel shapes as required. Support piping as indicated.

#### 3.3.3 Anchors, Bolts, Nuts, Washers, and Screws

Install where required for securing the work in place. Sizes, types, and spacings of anchors and bolts not indicated or specified shall be as required.

### 3.4 FIELD QUALITY CONTROL

#### 3.4.1 Inspections

Prior to initial operation, inspect piping system for compliance with drawings, specifications, and manufacturer's submittals.

#### 3.4.2 Piping Tests

Before final acceptance of the work, test each system as in service to demonstrate compliance with contract requirements.

##### ~~3.4.2.1 Pneumatic Test~~

~~Pneumatically test each piping system to 5 psig, examine joints with soap solution. Gradually increase to 50 psig and hold for 1 hour. The pneumatic test is more hazardous than a hydrostatic test, therefore, special safety measures, including the wearing of face masks, shall be taken during testing under pressure. Only authorized personnel shall be permitted in the area during pneumatic and hydrostatic testing.~~

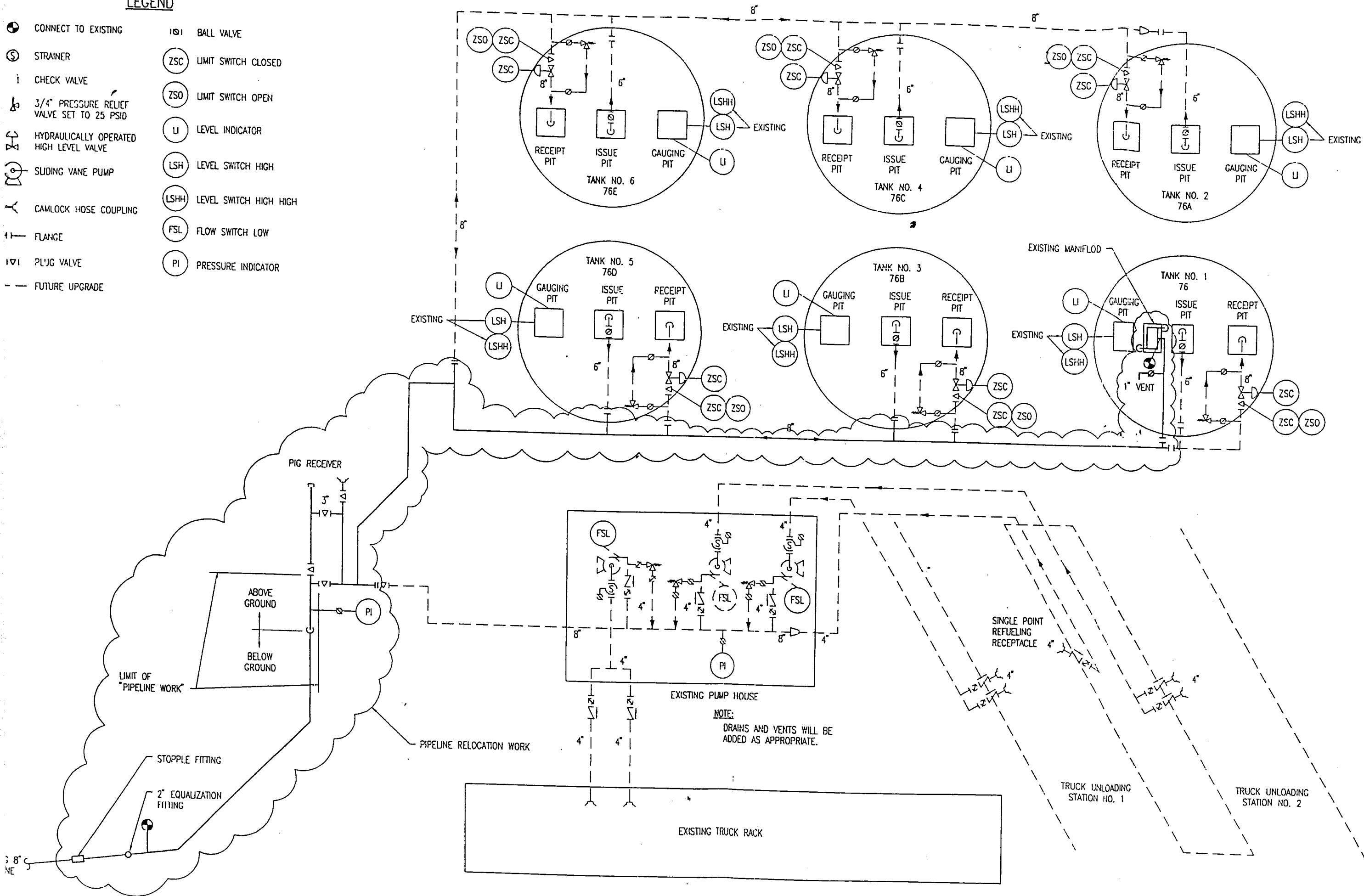
## 3.4.2.2 Hydrostatic Tests

Upon completion of pneumatic testing, hydrostatically test each piping system with fuel at 275 psig in accordance with ASME B31.3 and API RP 1110, with no leakage or reduction in gage pressure for 4 hours. Thoroughly flush piping before placing in operation. Correct defects in work provided by the Contractor and repeat tests until work is in compliance with contract requirements. Furnish electricity, instruments, connecting devices, and personnel for the tests. Government will furnish fuel testing and flushing. Contractor shall be responsible for losses greater than 10 percent of system volume.

-- End of Section --

# LEGEND

- CONNECT TO EXISTING
- ⊙ STRAINER
- ⌞ CHECK VALVE
- 3/4" PRESSURE RELIEF VALVE SET TO 25 PSID
- HYDRAULICALLY OPERATED HIGH LEVEL VALVE
- SLIDING VANE PUMP
- CAMLOCK HOSE COUPLING
- FLANGE
- PLUG VALVE
- FUTURE UPGRADE
- ⊙ BALL VALVE
- ZSC LIMIT SWITCH CLOSED
- ZSO LIMIT SWITCH OPEN
- LI LEVEL INDICATOR
- LSH LEVEL SWITCH HIGH
- LSHH LEVEL SWITCH HIGH HIGH
- FSL FLOW SWITCH LOW
- PI PRESSURE INDICATOR



DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND SOUTHERN DIVISION CHARLESTON, S.C.		RECORD DRAUGHT DATE CODE D. NO. 80091 DRAUGHT SIZE: D	
FUEL FACILITY REPAIRS/TANK INSPECTIONS PIPING SCHEMATIC		CONSTRUCTION CONTR. NO. NAME: (blank)	
REV.	DESCRIPTION	PREP BY	DATE
APPROVED	DATE	OTHER IN CHARGE	DATE
DRAWING NO. 94-1751 PROJECT NO. 94-1751 DRAWING PLOTTED 12-08-94 BY: (blank)		FILE NO. 94-1751	

**APPENDIX C**

**TECHNICAL SPECIFICATION FOR CLEARING AND GRUBBING**


DEPARTMENT OF THE NAVY

SOUTHERN DIVISION

TECHNICAL SPECIFICATION

FOR

CLEARING AND GRUBBING

0	7/2/94	Issued for use	KK	RTJ	AB	KBH
NO.	DATE	REASON FOR REVISION	BY	CHECK	SUPV	PE
ORIGIN		CLEARING AND GRUBBING	JOB NO. 22567			
			TECHNICAL SPECIFICATION		Rev.	
			001-SP000-002		0	
			SHEET 1 OF 4			



## CONTENTS

	Page
1.0 GENERAL .....	3
2.0 ABBREVIATIONS .....	3
3.0 CODES AND STANDARDS .....	3
4.0 SUBMITTALS .....	3
5.0 FIELD OPERATIONS .....	4
5.1 CLEARING .....	4
5.2 GRUBBING .....	4

## TECHNICAL SPECIFICATION FOR CLEARING AND GRUBBING

### 1.0 GENERAL

This specification defines the technical requirements and establishes the quality and workmanship required for clearing and grubbing. Not all operations defined herein may be required. Reference is directed to applicable subcontract Scope of Work and engineering drawings for specific services required.

### 2.0 ABBREVIATIONS

None.

### 3.0 CODES AND STANDARDS

The Subcontractor shall control the quality of items and services to meet the requirements of this specification, applicable codes and standards, and other Subcontract documents.

### 4.0 SUBMITTALS

- 4.1 Engineering documentation requirements are summarized on the Subcontractor Submittal Requirements Summary, Exhibit F, and are augmented by detailed requirements listed herein. Bechtel Environmental, Inc., (BEI) will determine if documentation is complete as submitted by the Subcontractor, and reserves the right to reject and require resubmittal of any submittal that does not meet the Subcontract requirements.
- 4.2 Unless noted otherwise, all Subcontractor submittals shall be made to BEI at least two (2) weeks prior to use, fabrication, or implementation.
- 4.3 For those submittals needed within the two (2) weeks following Subcontract award, submittals shall be made no later than commencement of work; BEI will notify the Subcontractor of the status of the submittal by telephone within three (3) work days following receipt of the submittal.

## 5.0 FIELD OPERATIONS

### 5.1 CLEARING

- 5.1.1 Clearing shall consist of removing and disposing of only designated trees and shrubs, and mowing grass inside the work area. Trees and shrubs designated for removal shall be cut to no more than 2 inches high, measured on the side adjacent to the highest ground. Grass within the work area shall be mowed to a maximum height of one inch prior to excavation.
- 5.1.2 The Subcontractor shall clear only areas designated on the engineering drawings or as directed by BEI in the field. The Subcontractor shall protect all trees, shrubs, or plants which are not specified for removal. The Subcontractor shall be responsible for restoring any unauthorized removal or damage to trees, shrubs, or plants at no additional cost to BEI.
- 5.1.3 All removed trees and shrubs shall be cut or otherwise suitably reduced in size for safe transport. Grass clippings shall be placed in heavy duty garbage bags.
- 5.1.4 All above-ground cleared materials shall be hauled and disposed of at a licensed local sanitary landfill or stockpiled as directed by BEI.
- 5.1.5 All stumps with a trunk diameter exceeding 6 inches shall be treated by one of the following methods:
  - a. Stumps shall be ground in place with a stump cutter.
  - b. Stumps shall be uprooted, broken down, and checked for contamination. Stump debris shall be disposed of at a licensed local sanitary landfill or stockpile as directed by BEI.


### 5.2 GRUBBING

- 5.2.1 Material to be grubbed, together with logs and other organic debris not suitable for foundation purposes, shall be removed to a depth of not less than 18 inches below original surface level of the ground in areas indicated to be grubbed. Depressions made by grubbing shall be filled with a suitable material and compacted to make the surface conform with the original adjacent surface of the ground.
- 5.2.2 Subcontractor shall verify that grubbed material is uncontaminated as directed by BEI.

**APPENDIX D**

**TECHNICAL SPECIFICATION FOR  
UNCONTAMINATED EARTHWORK**

DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
  
STANDARD SPECIFICATION  
FOR  
UNCONTAMINATED EARTHWORK

1	1-31-95	Revised throughout and to CSI format	KK	SIB	FAR	JRM
0	7/21/94	Issued for use	KK	RTJ	PH	RBB
NO.	DATE	REVISION	BY	CHECK	SUPV	PE
ORIGIN  		Uncontaminated Earthwork		NO. 22567 STANDARD SPECIFICATION 001-SP000-006 SHEET 1 OF 17		
				Rev		1

## CONTENTS

	Page
PART 1.0 GENERAL .....	4
1.1 SCOPE .....	4
1.2 WORK INCLUDED .....	4
1.3 RELATED WORK NOT INCLUDED .....	4
1.4 REFERENCED CODES AND STANDARDS .....	4
1.4.1 American Society for Testing and Materials (ASTM) .....	4
1.4.2 Occupational Safety and Health (OSHA) .....	5
1.5 SUBMITTALS .....	5
1.5.1 Testing Reports .....	5
1.5.2 Testing Laboratory Certifications and Qualifications .....	5
1.5.3 List of Equipment .....	5
1.5.4 Onsite Borrow Pit Operations .....	5
1.5.5 Offsite Borrow Pit Operations .....	6
1.5.6 Aggregate Source .....	6
1.5.7 Protection of Existing Foundations .....	6
1.5.8 Shoring Design and Calculations .....	6
1.5.9 Soils Laboratory Test Results .....	6
1.5.10 Drainage Design .....	6
1.5.11 Excavation Daily Inspections .....	6
1.5.12 Shoring Inspector .....	6
1.5.13 Professional Engineer's License .....	7
1.6 QUALITY STANDARDS .....	7
1.7 DEFINITIONS .....	7
1.7.1 Unstable Material .....	7
1.7.2 Rock .....	7
PART 2.0 PRODUCTS .....	7
2.1 BACKFILL .....	7
2.1.1 General .....	7
2.1.2 Structural .....	7
2.2 BEDDING MATERIALS .....	7
2.3 AGGREGATE BASE .....	8
2.4 TEMPORARY SEDIMENT BARRIERS .....	8
2.5 EROSION CONTROL BLANKETS .....	8
2.6 PLASTIC MARKING TAPE .....	8
PART 3.0 EXECUTION .....	9
3.1 PRE-EARTHWORK EVALUATION .....	9
3.2 EROSION AND SEDIMENT CONTROL .....	9
3.3 DUST CONTROL .....	9

# CONTENTS (continued)

	Page
3.4 DRAINAGE, DEWATERING, AND STREAM DIVERSION . . . . .	10
3.4.1 Drainage . . . . .	10
3.4.2 Dewatering . . . . .	10
3.4.3 Stream Diversion . . . . .	10
3.5 BLASTING . . . . .	10
3.6 EXCAVATION . . . . .	10
3.6.1 General . . . . .	10
3.6.2 Shoring . . . . .	10
3.6.3 Foundation Excavation . . . . .	11
3.6.4 Utility Excavation . . . . .	11
3.7 OVEREXCAVATION . . . . .	12
3.8 DITCHES, GUTTERS, AND CHANNELS . . . . .	12
3.9 STOCKPILING . . . . .	12
3.10 SUBGRADE PREPARATION . . . . .	12
3.11 BORROW AND AGGREGATE SOURCES . . . . .	13
3.12 BACKFILLING . . . . .	13
3.12.1 General . . . . .	13
3.12.2 Placement and Compaction Requirements . . . . .	13
3.13 AGGREGATE BASES . . . . .	14
3.14 FINISH GRADING . . . . .	14
3.15 PROTECTION OF WORK . . . . .	14
3.16 SECURITY . . . . .	15
3.17 QUALITY CONTROL AND VERIFICATION . . . . .	15

## TABLE

Table	Title	Page
3-1	Backfill Testing Specifications . . . . .	16

## **PART 1.0 GENERAL**

### **1.1 SCOPE**

Perform excavation of uncontaminated materials.

### **1.2 WORK INCLUDED**

- 1.2.1 Furnishing labor, materials, tools and equipment.
- 1.2.2 Installing and maintaining dust, sediment and erosion control.
- 1.2.3 Performing soil testing
- 1.2.4 Providing shoring as needed.
- 1.2.5 Securing area (temporary barriers) as needed.
- 1.2.6 Excavating and backfilling uncontaminated material.

### **1.3 RELATED WORK NOT INCLUDED**

- 1.3.1 Establishing limits of excavation and backfill.
- 1.3.2 Clearing and grubbing is included in Technical Specification 001-SP000-002.

### **1.4 REFERENCED CODES AND STANDARDS**

Unless otherwise specified or shown, the latest edition of the following Codes and Standards at the time of bid shall apply to the extent indicated herein.

#### **1.4.1 American Society for Testing and Materials (ASTM)**

- ASTM D 1556 Density of Soil In-Place by the Sand-Cone Method
- ASTM D 1557 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop
- ASTM D 2167 Density and Unit Weight of Soils In-Place by the Rubber Balloon Method
- ASTM D 2216 Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil-Aggregate Mixtures
- ASTM D 2487 Classification of Soils for Engineering Purposes
- ASTM D 2922 Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth)



- ASTM D 3017    Water Content of Soil and Rock In-Place by Nuclear Methods (Shallow Depth)
- ASTM D 4253    Maximum Index Density of Soils Using a Vibratory Table
- ASTM D 4254    Minimum Index Density of Soils and Calculation of Relative Density
- ASTM D 4318    Liquid Limit, Plastic Limit, and Plasticity Index of Soils

#### **1.4.2 Occupational Safety and Health (OSHA)**

- 29 CFR 1910    Occupational Safety and Health Regulations for General Industry
- 29 CFR 1926    Occupational Safety and Health Regulations for Construction

### **1.5 SUBMITTALS**

Not all submittals defined herein may be required. Only engineering document requirements as summarized in Exhibit F (Attachment A), "Subcontractor Submittal Requirements Summary" (SSRS), shall apply. Submittals identified shall meet the detailed requirements herein. Bechtel will determine if documentation is complete as submitted and reserves the right to require the resubmittal of any submittals that do not meet specified requirements.

#### **1.5.1 Testing Reports**

Submit two unbound copies of testing results, including calibration curves and calibration results within 24 hours of conclusion of physical tests.

#### **1.5.2 Testing Laboratory Certifications and Qualifications**

Submit qualifications and requested certifications of the commercial testing laboratory. Include resumes of key personnel, client references from previous work of similar scope and laboratory capabilities.

#### **1.5.3 List of Equipment**

Submit a list of equipment proposed for use. Include type, size, and rating of equipment proposed to be used. For compactive rollers, include the weight, drum, or wheel size and cleat size, if any.

#### **1.5.4 Onsite Borrow Pit Operations**

Submit proposed operations plans for any onsite borrow pit(s). Include proposed procedures and plans for control of water, erosion and dust, access road construction and maintenance, and borrow excavation. Bechtel will provide the information on onsite borrow pit location and available test reports on the borrow material.

#### **1.5.5 Offsite Borrow Pit Operations**

Submit proposed offsite borrow information to include: borrow pit location and address, owner's name and state permit/licensing number, and the ASTM test reports required to satisfy the requirements listed in the "2.0 PRODUCTS" section of this specification.

#### **1.5.6 Aggregate Source**

Submit proposed offsite aggregate source information to include aggregate source location and address, owner's name and state permit/licensing number, and ASTM test reports required to satisfy the requirements listed in the "2.0 PRODUCTS" section of this specification.

#### **1.5.7 Protection of Existing Foundations**

Submit proposed modifications to protect existing foundations in accordance with this specification.

#### **1.5.8 Shoring Design and Calculations**

Submit proposed shoring design and engineering calculations or alternate slope protection measures in accordance with Subpart P, OSHA 29 CFR 1926. Design shall be signed and stamped by a Professional Engineer licensed in the state where the work is performed.

#### **1.5.9 Soils Laboratory Test Results**

Submit soil classification test results and relative density or compaction curve test results, as appropriate.

#### **1.5.10 Drainage Design**

Submit proposed drainage design prior to drainage system construction not indicated on engineering drawings. Design shall be signed and stamped by a Professional Engineer licensed in the state where the work is performed.

#### **1.5.11 Excavation Daily Inspections**

Submit daily inspections of the excavation areas in accordance with OSHA 29 CFR 1910 and 1926 prior to commencing work each day.

#### **1.5.12 Shoring Inspector**

Submit resume of the shoring inspector to be provided for bid evaluation. Inspector shall be qualified in accordance with Subpart P, OSHA 29 CFR 1926.

### **1.5.13 Professional Engineer's License**

Submit copy of Professional Engineer's license for bid evaluation (for the state where work is performed) for Professional Engineer(s) used for the shoring and drainage designs.

## **1.6 QUALITY STANDARDS**

Perform the work and control the quality of items and services to meet the requirements of this specification, subcontract documents, and applicable codes and standards.

## **1.7 DEFINITIONS**

### **1.7.1 Unstable Material**

Materials too weak, as determined by Bechtel, to properly support the utility pipe, conduit or appurtenant structure.

### **1.7.2 Rock**

Material that (1) measures approximately 1/2 cubic yard or more and cannot be removed without systematic drilling and blasting, such as rock material in ledges, bedded deposits, unstratified masses, and conglomerate deposits or (2) is below-grade concrete or masonry structures, exceeding 1/2 cubic yard in volume and greater than 9 in. in thickness. Asphaltic or portland cement pavements is not considered rock.

## **PART 2.0 PRODUCTS**

### **2.1 BACKFILL**

#### **2.1.1 General**

Cohesive or cohesionless well-graded materials free of contamination, trash, debris, roots or other organic matter, frozen material, stones, or other material larger than 3 in. in any dimension, with a plasticity index (PI)  $\leq 20$ .

#### **2.1.2 Structural**

Structural fill shall meet the requirements of general fill (Section 2.1.1) but shall have a PI of  $\leq 15$ .

### **2.2 BEDDING MATERIALS**

Bedding material shall consist of well-graded sand, gravel, or slag composed of hard, tough, and durable particles and shall contain not more than 10 percent by weight of material passing a No. 200 sieve and no less than 95 percent by weight, passing the 1-in. sieve or the maximum size recommended by the pipe manufacturer, whichever is smaller.

Bedding materials shall be free from rocks 2 in. or larger in any dimension or free from rocks of such size as recommended by the pipe manufacturer, whichever is smaller. Bedding material, for pipes coated or wrapped for corrosion protection, shall be free of stones larger than 1 in. in any dimension, or as recommended by the pipe manufacturer, whichever is smaller.

### 2.3 AGGREGATE BASE

Aggregate base shall be in accordance with state transportation requirements.

### 2.4 TEMPORARY SEDIMENT BARRIERS

Materials used for sediment barriers shall consist of straw bales, hay bales, geotextile filter fabric made expressly for use as a silt screen, or other materials approved by Bechtel prior to their use. Straw and hay bales shall not be used for permanent sediment barriers unless approved by Bechtel.

2.4.1 Baled hay or straw shall be laid end to end such that no gap exists between bales. Reinforcing bars shall be #4 bar and a minimum of 2½ ft long.

2.4.2 Filter fabric shall be a material made expressly for the purpose of sediment control such as Exxon GTF 101S Silt Screen or approved equal.

### 2.5 EROSION CONTROL BLANKETS

Erosion control blankets shall be Curlex Blankets manufactured by American Excelsior Company or approved equal.

### 2.6 PLASTIC MARKING TAPE

Plastic marking tape shall be of a type specifically manufactured for marking and locating underground utilities. It shall contain acid- and alkali-resistant polyethylene film and integral wires, foil backing, or other means to enable detection by a metal detector when the tape is buried in soil up to 3 ft deep. The metallic core of the tape shall be encased in a protective jacket or provided with other metallic core type to protect it from corrosion. The plastic marking tape shall have the following properties:

<u>Properties</u>	<u>Value</u>
Thickness (min.)	0.004-in.
Width	6-in.
Strength (min.)	
lengthwise	1750 psi
crosswise	1500 psi

<u>Properties</u>	<u>Value</u>
Color	Utility line type
Red	Electric
Yellow	Gas, Oil, Dangerous materials
Orange	Telephone, Telegraph, Television, Police, Fire, Communication
Blue	Water
Green	Sewer

## **PART 3.0 EXECUTION**

### **3.1 PRE-EARTHWORK EVALUATION**

Prior to performing any earthwork, examine the work area to identify pre-existing conditions (e.g. overhead power lines, access, etc.) that could impact the performance and completion of work. Bechtel will provide available information on the location of underground utilities. Verify these locations, provide structural support to utility lines, and coordinate inspection with and provide support to utility companies. Unless directed otherwise, the services of all underground utilities encountered during any earthwork shall be restored to their original condition. Applicable permits shall be obtained prior to commencing work unless directed otherwise.

### **3.2 EROSION AND SEDIMENT CONTROL**

Temporary sediment barriers shall be installed in accordance with the subcontract documents and maintained during construction until permanent sediment barriers are in place.

Erosion and sediment shall be controlled by the following techniques subject to Bechtel review on a case-by-case basis:

- covering with synthetic liner material
- covering with uncontaminated soil material
- sediment barriers

### **3.3 DUST CONTROL**

Dust shall be controlled by the following techniques subject to Bechtel review on a case-by-case basis:

- wetting with water
- wetting with a synthetic dust suppressant
- establishing temporary vegetative cover
- compaction
- sealing by rolling with a smooth drum

### **3.4 DRAINAGE, DEWATERING, AND STREAM DIVERSION**

#### **3.4.1 Drainage**

Surface water shall be directed away from excavation and construction areas. Diversion ditches, check dams, dikes, and/or grading shall be developed and maintained during construction.

Excavated slopes and backfill surfaces shall have a minimum 3% slope to promote runoff and shall be protected from erosion and sloughing. Excavation slopes shall conform to Subpart P, "Excavation, Trenching, and Shoring," of OSHA 29 CFR 1926.

#### **3.4.2 Dewatering**

Unless noted otherwise, all excavations shall be kept in a dewatered condition. Groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls; boils, uplift, and heave in the excavation; and to eliminate any interference with excavation progress.

#### **3.4.3 Stream Diversion**

Stream diversion(s) shall be developed as shown on the engineering drawings or Scope of Work.

### **3.5 BLASTING**

Blasting is not permitted.

### **3.6 EXCAVATION**

#### **3.6.1 General**

Excavation shall conform to the lines, grades, and depths identified on the engineering drawings or Scope of Work, and field-verified by Bechtel in accordance with OSHA regulations. Excavated areas shall be maintained in a clean condition, free from leaves, brush, trash and other debris. They shall be inspected and documented daily, prior to commencing work, in accordance with OSHA 29 CFR 1910 and 1926.

#### **3.6.2 Shoring**

Shoring, including temporary sheet piling, shall be furnished and installed as necessary to protect workers, slopes, adjacent paving, structures, and utilities. Shoring, bracing, and sheeting shall be removed as excavations are backfilled to prevent cave-ins. Alternate methods (e.g. benching, sloping, trench boxes, etc.) may be used where applicable. They shall be developed in accordance with Subpart P, OSHA 29 CFR 1926.

### **3.6.3 Foundation Excavation**

Excavations shall extend a sufficient distance from walls and footings to allow for placement and removal of forms. Excavation to final grade shall be performed within 48 hours of subsequent concrete placement. Only excavation methods that will leave the foundation soils in a solid condition shall be used. Excavation shall be inspected and approved by Bechtel prior to placement of rebar.

### **3.6.4 Utility Excavation**

#### **Trench Excavation**

Trench walls below the top of utility lines (pipe or conduit) shall be sloped or made vertical as recommended by the manufacturer. Installation shall be in accordance with OSHA 2207. Trench walls more than five ft deep shall be shored, cut back to a stable slope at least equal to the angle of repose, or provided with equivalent means of protection for employees who may be exposed to moving ground or cave-in. Special considerations shall be given to slopes that may be adversely affected by construction erosion or sloughing. Remove and handle any additional material caused by erosion or sloughing.

#### **Excavation Widths**

The trench width below the top of pipe shall not exceed 24 in. plus pipe or conduit outside diameter (O.D.) for pipes or conduits of less than 24 in. inside diameter (I.D.), and 36 in. plus pipe O.D. for pipes larger than 24 in. I.D. Where recommended trench widths are exceeded, redesign a stronger pipe or conduit, or utilize special installation procedures.

#### **Rock**

Rock in either ledge or boulder formation shall be replaced with suitable materials to provide a compacted earth cushion having a thickness between unremoved rock and the pipe or conduit of at least 9 in. Where bell-and-spigot pipe or slip-jointed conduit is used, the cushion shall be maintained under the joint as well as under the straight portion of the pipe or conduit. Rock faces shall be cleaned of loose debris and cut to a firm surface either level, stepped, or serrated, as shown on the engineering drawings or as directed by Bechtel. Loose disintegrated rock and thin strata shall be removed.

#### **Appurtenances**

Excavation for manholes, catch basins, inlets or similar structures shall be sufficient to leave at least 12 in. clear between outer structure surfaces and the face of the excavation or support members. Removal of unstable/unyielding material (e.g., loose disintegrated rock and thin strata, etc.) shall be removed as specified herein. When concrete or masonry is to be placed in an excavated area, special care shall be taken not to disturb the bottom of the excavation.

## **Trench Bottoms**

Trench bottoms shall be accurately graded to provide uniform bearing and support for the bottom quadrant of each section of pipe.

## **Replacement of Unstable/Unyielding Material**

Where unstable and/or unyielding material is encountered in the trench bottom, such material shall be removed as required herein or as directed by Bechtel and replaced with bedding material.

## **3.7 OVEREXCAVATION**

Overexcavation shall be backfilled to design grade with general backfill and compacted to a density equal to or greater than that required for the subsequent fill material.

## **3.8 DITCHES, GUTTERS, AND CHANNELS**

Ditches, gutters, and channel changes shall be cut accurately to the cross sections and grades indicated on the engineering drawings or as directed by Bechtel. All roots, stumps, rock, and foreign matter in the sides and/or bottom of ditches, gutters, and channel changes shall be trimmed and dressed or removed to conform to the slope, grade and shape of the section indicated.

## **3.9 STOCKPILING**

Excavated material satisfying the requirements for backfill in this specification shall be either transported and placed in designated fills or stockpiled at onsite locations as determined by Bechtel. All materials to be stockpiled shall be placed in areas that have been cleared and grubbed.

Stockpiles shall be kept in a neat and well-drained condition. Excavated backfill material and unsatisfactory materials shall be stockpiled separately. Stockpiles of satisfactory materials shall be protected from contamination. If the material in the stockpile becomes unsatisfactory for use as backfill such material shall be removed and replaced with satisfactory material from sources approved by Bechtel.

## **3.10 SUBGRADE PREPARATION**

Subgrades in structural areas shall be proof-rolled prior to placement of fill. Unsatisfactory material identified by proof-rolling shall be removed and replaced with general backfill and compacted in accordance with this specification.

Subgrades and compacted lifts for backfills shall be either scarified 2 in. prior to placement of the subsequent lift or compacted by sheepsfoot roller or similar equipment designed to compact the lift from the bottom to the top.



### **3.11 BORROW AND AGGREGATE SOURCES**

Unless directed otherwise, borrow material shall be obtained from onsite areas designated by Bechtel. Borrow areas shall be cleared, grubbed, disposed of debris, and surface water flow and erosion controlled. This work shall be considered operation related to onsite borrow excavation and shall be performed in accordance with this specification. If directed by Bechtel, the borrow and/or aggregate sources shall be identified and certification provided to Bechtel that the borrow/aggregate materials meets the requirements of this specification and transport material to the fill area. No offsite borrow and/or aggregate shall be brought onsite without prior written approval by Bechtel.

### **3.12 BACKFILLING**

#### **3.12.1 General**

General backfill shall be used for bringing fill and excavations to the lines and grades identified by Bechtel, and for replacing unsatisfactory subgrade materials. Compaction shall be accomplished by rollers and other equipment accepted by Bechtel suited to the type of material being compacted. Backfill shall be placed in horizontal layers not exceeding 8 in. in loose thickness when using conventional compaction equipment or 6 in. when using hand-operated compaction equipment. Backfill shall not be placed on unsatisfactory materials.

#### **3.12.2 Placement and Compaction Requirements**

Compacted subgrades damaged during performance or work shall be repaired to the required density prior to further construction at no expense to Bechtel. Each lift shall be moisture conditioned or aerated as necessary and compacted to not less than the percentage of maximum density specified below:

- The relative compaction (RC) and relative density (RD) of pipe or conduit bedding material shall be 90 percent and 70 percent respectively.
- In unpaved areas, general backfill shall be used and compacted to 85 percent RC and 50 percent RD.
- In areas to receive structures, general backfill shall be placed to 2 ft below footing depth and compacted to 90 percent RC, 70 percent RD. Structural fill, placed at 95 percent RC, 80 percent RD shall be used in the top 2 ft.
- In areas to receive paving, general backfill shall be placed to 6 in. below subgrade elevation, and compacted to 90 percent RC, 70 percent RD. Structural fill, placed at 95 percent RC, 80 percent RD shall be used in the top 6 in.

Backfilling adjacent to structures shall be placed and compacted uniformly to prevent wedging action or eccentric loading upon or against the structure. Backfill shall not be placed against concrete or masonry foundation wall prior to 7 days after completion of the walls.

### **Additional Requirements for Trench Backfilling**

Damaged pipes, conduits, culverts, or storm drains damaged from the performance of work shall be repaired or replaced at no expense to Bechtel.

Bedding material shall be in accordance with Part 2, "Products." Care shall be taken to ensure the bedding under the haunches of the pipe or conduit are compacted. The bedding shall be placed and compacted with approved tampers to a height of 1 ft above the utility line or as specified on the engineering drawings or as directed by Bechtel. The bedding surface for the line shall provide a firm foundation of uniform density throughout the entire length of the line. The joints and/or couplings shall be left uncovered during pressure tests.

Final backfill shall not be placed above the top of the pipe or conduit until all tests are satisfactorily performed. The remainder of the trench shall be filled with general or structural backfill and compacted to grade in accordance with this specification.

Manholes, catch basins, inlets, or similar structures shall be placed in such a manner that the structure will not be damaged by the shock of falling earth while backfilling. Backfill material shall be deposited and compacted as specified for final backfill and shall be brought up evenly, as practical, on all sides of the structure to prevent eccentric loading and stress.

Plastic marking tape as specified in Part 2, "Products," shall be installed 18 in. directly above the utility line.

### **3.13 AGGREGATE BASES**

Aggregate bases shall be constructed under pavements and placed directly on the subgrade. The aggregate base shall be placed in 4-in. lifts and compacted with a minimum of two passes of a hand-operated plate-type vibratory compactor or equivalent compactive effort. The material shall be compacted to 95 percent RC.

### **3.14 FINISH GRADING**

Graded areas shall be constructed true-to-grade, shaped to drain, and maintained free of trash and debris until final inspection is completed and the work is accepted. The embankment and excavation surfaces shall be finished to a smooth and compact surface in accordance with the lines, cross-sections or elevations and grades shown on the engineering drawings. Unless indicated otherwise, tolerances for graded areas shall be  $\pm 0.1$  ft.

### **3.15 PROTECTION OF WORK**

Settlement or erosion that occurs in backfilled, filled, graded, or topsoiled areas prior to acceptance of the work shall be repaired to the required conditions at no expense to Bechtel.

### **3.16 SECURITY**

When necessary and practical, as determined by Bechtel, work areas shall be secured using barriers (e.g., rope, snow fence) to prevent inadvertent entry to work areas.

### **3.17 QUALITY CONTROL AND VERIFICATION**

- 3.17.1 Testing shall be performed by a commercial testing laboratory approved by Bechtel. Verification that the placement of backfill meets the requirements of this specification shall be submitted via testing reports. Testing shall be considered part of earthwork.
- 3.17.2 Test results shall be submitted for review prior to placement of the next lift above that area.
- 3.17.3 Table 3-1 shows the tests to be performed, test specifications, and test frequencies to verify that the backfill meets specification requirements. Additional tests shall be performed if the material or compaction requirements of this specification are not met.

Table 3-1  
Backfill Testing Specifications

<u>Test Name</u>	<u>Test Specification</u>	<u>Test Application</u>	<u>Test Frequency</u>
Moisture-Density Relation	ASTM D 1557 or ASTM D4253 and ASTM D 4254	Each type of material or source of material to determine optimum moisture and laboratory maximum density values	a) one representative test per 2,000 cy of fill and backfill or when any change in material occurs that may affect the optimum moisture content or laboratory maximum density.
In-Place Moisture Content  and	ASTM D 3017 ASTM D 2216	ASTM D 3017 is for determining moisture content of soil backfill. ASTM D 2216 is for checking accuracy of ASTM D 3017	a) one test per 20,000 sf or one test per lift, whichever is greater, for general backfill areas compacted by other than hand or hand-operated machines.  b) one test per 10,000 sf or minimum of one test per lift, whichever is greater, for general backfill areas compacted by hand or hand-operated machines.
In-place Density	ASTM D 2922 ASTM D 1556 or ASTM D 2167	ASTM D 2922 is for determining field in-place density (see Note 1 under "Test Frequency"). ASTM D 1556 or ASTM D 2167 are for checking accuracy or ASTM D 2922.	c) one test per 2,000 sf or minimum of two tests per lift, whichever is greater, for structural backfill areas compacted by other than hand-operated machines.  d) one test per 1,000 sf or minimum of two tests per lift, whichever is greater, for structural backfill areas compacted hand-operated machines.  e) one test per each area less than 1,000 sf or one test for each 100 lf of length, whichever is greater, for trenches, pits, building perimeters, or other structures or areas less than 10 ft in width and compacted by hand-operated machines.

Table 3-1  
Backfill Testing Specifications (continued)

<u>Test Name</u>	<u>Test Specification</u>	<u>Test Application</u>	<u>Test Frequency</u>
Accuracy Tests			<p>Accuracy Test: One ASTM D 2216 test for every ten ASTM D 3017 tests performed.</p> <p>Accuracy Test: One ASTM D 1556 of ASTM D 2167 test for every 20 ASTM D 2922 tests performed.</p> <p>Note 1: The calibration curves for ASTM D 2922 shall be checked and adjusted per ASTM D 2922, "Adjusting Calibration Curve". Both the calibration curves furnished with the moisture gauges and density calibration curves shall also be checked per ASTM D 3017. Calibration checks of the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at the beginning and end of each day that the equipment is used.</p>



NAVY RAC PROJECT, JOB# 22567 ## 226 CCN: 004098  
DATE RECEIVED: MAR 28 1995

UPDATE COMMUNICATIONS CONTROL REGISTER  
MJBARBER

22567

CCN-Item No. 004098-1 Rec Type WP Comm Date 27-MAR-95 Admin Record N

Subject CEC - COVERSHEET FOR NTFF WORK PLAN

From Org To Org File Loc Closes CCN -1  
SIMS, L. BEI FILE XXX M  
Comm Reference Published?

Cross Ref (Affected Doc) Field CCN -1

Site Codes Subject Codes Film Reel  
226 5320

----- TRACKING -----  
Owed By Org. Due Date Closing CCN -1

Owed To Org. Forecast Date Compl Date

Comment/Action

Count: \*0

<List><Replace>

DISTRIBUTION	WA	WO	DISTRIBUTION	WA	WO	DISTRIBUTION	WA	WO
PROGRAM MGR L. J. TRAUTNER						NAVY SouthDiv:		
PROJECT MANAGERS P. W. TOMICZEK						R.J. MEDDICK		
{CHS} K. S. ATCHLEY						E.G. BALL		
{JAX} V. H. BAUER						M.E. HERRON		
{ALB/ATH} R. J. COHOSE						K. LOTT		
{PEN} G. P. CROTWELL						G.R. TURNER		
{KW/ORL} O. N. McNEIL						D. PATRICK		
{JAX/CF} L. M. SIMS						G. PEARSON		
SITE SUPERINTENDENTS G. C. SMITH						S. BERRY		
{CHS/PI} W. E. HEVRDEYS								
{JAX} E. NAJMOLA								
{ALB/ATH} W. F. NORTON								
{KW/ORL} A. N. SALTZMAN								
{MP} S. SANTAMARIA								
{CF} F. SEALE								
{JAX/CF/MP - PDCC} T. JENKINS								
PROJECT ENGINEER J. R. MANNING								
P.E. {ORL} T. M. CONRAD								
P.E. {PI/PEN} S. W. COWAN								
P.E. {KW} S. W. TAYLOR						ABB-ES		
S&H MANAGER R. W. THOMPSON			<i>Laura Dicke</i>	1		ENSAFE		
CONTRACT ADM MGR D. S. HEIM								
PROCUREMENT G. M. FRANKLIN								
FIELD QC MANAGER J. A. GRISSETT						SUBCONTRACTORS:		
PROJ CONTROLS MGR J.V. HARGREAVES			DELIVERY ORDER FILE					
PROJECT ADMINISTRATOR R.J. STOUT			SENSITIVE FILE			FS		
ACCOUNTING			PDCC FILE	1		GEL		



SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORTH CHARLESTON, SOUTH CAROLINA



004098

INTERIM REMEDIATION WORK PLAN  
FOR NORTH TANK FUEL FARM

FOR

NAVAL AIR STATION - CECIL FIELD

JACKSONVILLE, FLORIDA

Prepared for

DEPARTMENT OF THE NAVY  
SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND

Under Contract No. N62467-03-D-0036

Prepared by

BECHTEL ENVIRONMENTAL, INC.  
OAK RIDGE, TENNESSEE

MARCH 1995

Revision 1

Bechtel Job No. 22567

Prepared:

J. R. Mans  
Senior Scientist3-17-95  
Date

Approved:

J. Amory for H. Bauer  
Project Manager3-22-95  
Date

Approved:

R. [Signature]  
Navy Contracting Officer27 Mar 95  
Date

RECEIVED

MAR 2 1995

BECHTEL 22567

Post-It™ brand fax transmittal memo 7671

# of pages ▶ 1

To	LUNNO SIMS	From	E. Ball
Co.	BEI	Co.	SODIV
Dept.		Phone	(803) 743-0630
Fax	(615) 220-2748	Fax	(803) 743-0848



NAVY RAC PROJECT, JOB# 22567 ## 226 CCN: 0 0 4 1 3 4  
 DATE RECEIVED: MAR 29 1995

22567

UPDATE COMMUNICATIONS CONTROL REGISTER  
 MJBARBER

CCN-Item No. 004134-1 Rec Type MI Comm Date 27-MAR-95 Admin Record N

Subject CEC - GERALD PEARSON COMMENTS ON NTFF WORKPLAN

From Org To Org File Loc Closes CCN -1  
 SIMS, L. BEI FILE XXX M  
 Comm Reference Published?

Cross Ref (Affected Doc) Field CCN -1

Site Codes Subject Codes Film Reel  
 226 5320

----- TRACKING -----

Owed By Org. Due Date Closing CCN -1

Owed To Org. Forecast Date Compl Date

Comment/Action

Count: \*0

<List><Replace>

DISTRIBUTION	WA	WO	DISTRIBUTION	WA	WO	DISTRIBUTION	WA	WO
PROGRAM MGR L. J. TRAUTNER						NAVY SouthDiv:		
PROJECT MANAGERS P. W. TOMICZEK						R.J. MEDDICK		
{CHS} K. S. ATCHLEY						E.G. BALL		
{JAX} V. H. BAUER						M.E. HERRON		
{ALB/ATH} R. J. COHOSE						K. LOTT		
{PEN} G. P. CROTWELL						G.R. TURNER		
{KW/ORL} O. N. McNEIL						D. PATRICK		
{JAX/CF} L. M. SIMS						G. PEARSON		
SITE SUPERINTENDENTS G. C. SMITH						S. BERRY		
{CHS/PI} W. E. HEVRDEYS								
{JAX} E. NAJMOLA								
{ALB/ATH} W. F. NORTON								
{KW/ORL} A. N. SALTZMAN								
{MP} S. SANTAMARIA								
{CF} F. SEALE								
{JAX/CF/MP - PDCC} T. JENKINS								
PROJECT ENGINEER J. R. MANNING								
P.E. {ORL} T. M. CONRAD								
P.E. {PI/PEN} S. W. COWAN								
P.E. {KW} S. W. TAYLOR						ABB-ES		
S&H MANAGER R. W. THOMPSON						ENSAFE		
CONTRACT ADM MGR D. S. HEIM								
PROCUREMENT G. M. FRANKLIN								
FIELD QC MANAGER J. A. GRISSETT						SUBCONTRACTORS:		
PROJ CONTROLS MGR J.V. HARGREAVES			DELIVERY ORDER FILE					
PROJECT ADMINISTRATOR R.J. STOUT			SENSITIVE FILE			FS		
ACCOUNTING			PDCC FILE	1		GEL		



SOUTHERN DIVISION  
 NAVAL FACILITIES ENGINEERING COMMAND  
 NORTH CHARLESTON, SOUTH CAROLINA





004134  
RECEIVED  
MAR 27 1995  
BECHTEL 22567

To: File

Subject HTFF

Gerald Pearson Comment -

Gerald asked me to revise the Pearson to  
include what is handwritten on the  
next sheet. Comment was incorporated into  
workplan before final Mary approval.

Lynn  
Davis

RECEIVED  
MAR 27 1995  
BECHTEL 22567

226 NTFF

- Excavate the underground pipeline tie-in point. Install and test underground pipeline from pig trap to final tie-in point.
- Install pig trap and aboveground pipeline to tie-in point at the Tank 76 manifold. Provide blind flanges at future connections.
- With all available tankage full, take the existing pipeline out of service. Install a stopple fitting. Defuel the pipeline by vacuum truck at the existing pig trap and equilization fitting. Total expected fuel stripped is 2,100 gallons.
- Cold cut the pipeline at the tie-in points. Inert the existing pipe. Weld in the tie-in spools.
- Radiograph the tie-in welds. Cap the abandoned pipe at each end.
- Hydrostatically test the piping from the stopple to the Tank 76 manifold.
- Remove the stopple. Pressurize the pipeline and vent all air. Receive sufficient fuel to flush out the line. Close the receipt valves at the Tank 76 manifold and at the pig trap. Pressure test, with fuel, from the pig trap to the Tank 76 manifold.
- Close off stopple and equilization fitting. Backfill, loam, and seed disturbed areas. Provide concrete marker at the stopple location.
- Provide documentation required to meet 49 CFR 195 pipeline repair requirements.
- Touch-up paint on aboveground piping.
- Install a sanitary sewer line *from Building 285 as indicated in Appendix A, Sheet C-1.*

Figures showing the existing site conditions, ~~approximate limits of excavation, temporary project site layout, and data from recent site investigations~~ and pipeline relocation plan are included in Appendix A.

#### 4.1 MOBILIZATION

Mobilization will include delivering to the jobsite and work areas all construction equipment, tools, materials, supplies, and miscellaneous articles and establishing a work force sufficient to commence and sustain construction activities as required.

A construction trailer(s) will be set up at the site for a field office and for storage of personnel protective equipment and monitoring equipment. ~~To control access, a temporary construction fence will be installed around the construction site at the NTFF.~~

~~A temporary vehicle and equipment decontamination facility will be constructed, including provisions to contain waters generated during decontamination activities. Water generated during decontamination will be controlled in accordance with Section 6.0, Waste Management.~~

- Excavate the underground pipeline tie-in point. Install and test underground pipeline from pig trap to final tie-in point.
- Install pig trap and aboveground pipeline to tie-in point at the Tank 76 manifold. Provide blind flanges at future connections.
- With all available tankage full, take the existing pipeline out of service. Install a stopple fitting. Defuel the pipeline by vacuum truck at the existing pig trap and equilization fitting. Total expected fuel stripped is 2,100 gallons.
- Cold cut the pipeline at the tie-in points. Inert the existing pipe. Weld in the tie-in spools.
- Radiograph the tie-in welds. Cap the abandoned pipe at each end.
- Hydrostatically test the piping from the stopple to the Tank 76 manifold.
- Remove the stopple. Pressurize the pipeline and vent all air. Receive sufficient fuel to flush out the line. Close the receipt valves at the Tank 76 manifold and at the pig trap. Pressure test, with fuel, from the pig trap to the Tank 76 manifold.
- Close off stopple and equilization fitting. Backfill, loam, and seed disturbed areas. Provide concrete marker at the stopple location.
- Provide documentation required to meet 49 CFR 195 pipeline repair requirements.
- Touch-up paint on aboveground piping.
- Install a sanitary sewer line from Building 285 as indicated in Appendix A, Sheet C-1.

Figures showing the existing site conditions, ~~approximate limits of excavation, temporary project site layout, and data from recent site investigations~~ and pipeline relocation plan are included in Appendix A.

#### 4.1 MOBILIZATION

Mobilization will include delivering to the jobsite and work areas all construction equipment, tools, materials, supplies, and miscellaneous articles and establishing a work force sufficient to commence and sustain construction activities as required.

A construction trailer(s) will be set up at the site for a field office and for storage of personnel protective equipment and monitoring equipment. ~~To control access, a temporary construction fence will be installed around the construction site at the NTFF.~~

~~A temporary vehicle and equipment decontamination facility will be constructed, including provisions to contain waters generated during decontamination activities. Water generated during decontamination will be controlled in accordance with Section 6.0, Waste Management.~~

Bechtel Environmental, Inc.  
Navy RAC - Southern Division  
Oak Ridge, TN - Job #22567

## FACSIMILE TRANSMISSION



TO: *Gerald Pearson* GERALD PEARSON

NAME:	DATE:	FAX #:	VERIFY:
COMPANY:		LOCATION:	

REMARKS:

---



---



---



---

FROM: *Glyn Jones*

NAME:		OPERATOR SIGNATURE:	
FAX: (615) 220-2748		PHONE: (615) 220- _____	
# OF PAGES <small>(including cover sheet)</small>	CHARGE:	DATE/TIME:	VERIFIED? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

REMARKS:

---



---



---



---

Please direct this fax and its contents to the person(s) designated. Thank You



NAVY RAC PROJECT, JOB# 22567 ## 226 CCN: 4146  
DATE RECEIVED: 3-29-95

22567

UPDATE COMMUNICATIONS CONTROL REGISTER  
TDMILLER

CCN-Item No. 004146-1 Rec Type TF Comm Date 29-MAR-95 Admin Record N

Subject CEC - ISSUE OF INTERIM REMEDIATION WORK PLAN FOR NORTH TANK FUEL FARM, R  
EV. 1

From Org To Org File Loc Closes CCN -1  
DEIKE, L. BEI DIST VAR M  
Comm Reference Published? N

Cross Ref (Affected Doc) Field CCN -1

Site Codes Subject Codes Film Reel  
226 5320

----- TRACKING -----

Owed By Org. Due Date Closing CCN -1

Owed To Org. Forecast Date Compl Date

Comment/Action \* see attached distribution

Count: \*1

<List><Replace>

DISTRIBUTION	WA	WO	DISTRIBUTION	WA	WO	DISTRIBUTION	WA	WO
PROGRAM MGR L. J. TRAUTNER						NAVY SouthDiv:		
PROJECT MANAGERS P. W. TOMICZEK						R.J. MEDDICK		
{CHS} K. S. ATCHLEY						E.G. BALL		
{JAX} V. H. BAUER						M.E. HERRON		
{ALB/ATH} R. J. COHOSE						K. LOTT		
{PEN} G. P. CROTWELL						G.R. TURNER		
{KW/ORL} O. N. McNEIL						D. PATRICK		
{JAX/CF} L. M. SIMS						G. PEARSON		
SITE SUPERINTENDENTS G. C. SMITH						S. BERRY		
{CHS/PI} W. E. HEVRDEYS								
{JAX} E. NAJMOLA								
{ALB/ATH} W. F. NORTON								
{KW/ORL} A. N. SALTZMAN								
{MP} S. SANTAMARIA								
{CF} F. SEALE								
{JAX/CF/MP - PDCC} T. JENKINS								
PROJECT ENGINEER J. R. MANNING								
P.E. {ORL} T. M. CONRAD								
P.E. {PI/PEN} S. W. COWAN								
P.E. {KW} S. W. TAYLOR						ABB-ES		
S&H MANAGER R. W. THOMPSON						ENSAFE		
CONTRACT ADM MGR D. S. HHEIM								
PROCUREMENT G. M. FRANKLIN								
FIELD QC MANAGER J. A. GRISSETT						SUBCONTRACTORS:		
PROJ CONTROLS MGR J.V. HARGREAVES			DELIVERY ORDER FILE					
PROJECT ADMINISTRATOR B.J. STOUT			SENSITIVE FILE			FS		
ACCOUNTING			PDCC FILE	1		GEL		



SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORTH CHARLESTON, SOUTH CAROLINA





NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: GERALD PEARSON

COPY NUMBER: N/A

Please **remove** "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL,"  
Rev. 0.

Please **insert** Revision 1, attached.

CCN# 4146



NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: WAYNE OEHLMAN COPY NUMBER: N/A

Please **remove** "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL,"  
Rev. 0.

Please **insert** Revision 1, attached.

CCW # 4146



NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: URSULA KLIMAS

COPY NUMBER: N/A

Please **remove** "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL,"  
Rev. 0.

Please **insert** Revision 1, attached.





NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: LYNN SIMS

COPY NUMBER: N/A

Please remove "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL,"  
Rev. 0.

Please insert Revision 1, attached.



NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: HERMANN BAUER COPY NUMBER: N/A

Please **remove** "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL,"  
Rev. 0.

Please **insert** Revision 1, attached.



NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: FRED SEALE

COPY NUMBER: N/A

Please remove "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL,"  
Rev. 0.

Please insert Revision 1, attached.

CCN # 4146



NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: FIELD FILE

COPY NUMBER: N/A

Please **remove** "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL,"  
Rev. 0.

Please **insert** Revision 1, attached.

CCN # 4146



NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: ROBERT MEDDICK

COPY NUMBER: N/A

On 3/29/95, a copy of the approved "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL," Rev. 1, was issued to the individuals listed on the attached sheet.



NAVY RAC  
PROJECT #22567

PAGE 1 OF 1  
ISSUE DATE 27-MAR-95  
TRANSMIT DATE 29-MAR-95

## TRANSMITTAL FORM

TO: MICHAEL HERRON

COPY NUMBER: N/A

On 3/29/95, a copy of the approved "Interim Remediation Work Plan for North Tank Fuel Farm for NAS Cecil Field, Jacksonville, FL," Rev. 1, was issued to the individuals listed on the attached sheet.

22567 29-MAR-95

DISTRIBUTION OF  
INTERIM REMEDIATION WORK PLAN FOR NORTH TANK FUEL FARM

<u>Copy</u> <u>Rev#</u>	<u>Copy Holder</u>	<u>Trans Type</u>	<u>Trans Date</u>
1	FRED SEALE	DL	29-MAR-95
1	GERALD PEARSON - NAVY	DL	29-MAR-95
1	LYNN SIMS	DL	29-MAR-95
1	<del>FIELD</del> <del>PDC</del> FILE	DL	29-MAR-95
1	URSULA KLIMAS - NAVY	DL	29-MAR-95
1	HERMANN BAUER	DL	29-MAR-95
1	WAYNE OEHLMAN	DL	29-MAR-95

R. Meddick }  
M. Herron } w/c



NAVY RAC PROJECT, JOB# 22567 ## \_\_\_\_\_ CCN: 004042  
DATE RECEIVED: 3/27/95

UPDATE COMMUNICATIONS CONTROL REGISTER  
TDJENKIN

22567

CCN-Item No. 004042-1 Rec Type TS Comm Date 17-MAR-95 Admin Record N

Subject CEC-TECHNICAL MEMO ON NORTH FUEL FARM AREA CTO\_090, PHASE I RAP

From KAISER, J. Org ABB To KIZER, B. Org NAVY File Loc M Closes CCN -1  
Comm Reference Published? N

Cross Ref (Affected Doc) Field CCN -1

Site Codes 226 Subject Codes 5060 Film Reel

TRACKING

Owed By Org. Due Date Closing CCN -1

Owed To Org. Forecast Date Compl Date

Comment/Action

Count: \*0

<Replace>

DISTRIBUTION	WA	WO	DISTRIBUTION	WA	WO	DISTRIBUTION	WA	WO
PROGRAM MGR L. J. TRAUTNER						NAVY SouthDiv:		
PROJECT MANAGERS P.W. TOMCZEK			V. MCCAIN	1		R.J. MEDDICK		
{CHS} K.S. ATCHLEY						E.G. BALL		
{JAX} V.H. BAUER /						M.E. HERRON		
{ALB/ATH} R.J. COHOSE						K. LOTT		
{PEN} G.P. CROTWELL						G.R. TURNER		
{KEY/ORL} O.N. McNEIL						D. PATRICK		
SITE SUPERINTENDENTS W.E. HEVRDEYS								
{JAX} E. NAJMOLA								
{ALB/ATH} B. NORTON								
{MAY} S. SANTA MARIA								
{CEC} F. SEALE /								
{PEN} G.C. SMITH								
PROJECT SCIENTIST J.R. MANNING								
P.E. {ORL} T. M. CONRAD								
P.E. {PAR/PEN} S.W. COWAN								
P.E. {JAX/MAY} M. MACINDOE								
P.E. {CEC} L.M. SIMS /						CLEAN:		
P.E. {KEY} S.W. TAYLOR						ABB-ES		
S&H MANAGER M.D. ATWOOD						ENSAFE		
CONTRACT ADM MGR D. HEIM								
PROCUREMENT G. FRANKLIN								
FIELD QC MANAGER J.A. GRISSETT						SUBCONTRACTORS:		
PROJ CONTROLS MGR J. HARGREAVES			DELIVERY ORDER FILE					
			REFERENCE LIBRARY			GWT		
PROJECT ADMINISTRATOR B.J. STOUT			SENSITIVE FILE			FS		
ACCOUNTING S.L. ORLANDO			PDCC FILE	1		GEL		



S:\FORMS\DISTRI

SOUTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORTH CHARLESTON, SOUTH CAROLINA



13 February 1995